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This second volume of Brandenburg essays presents fresh evidence of the broadening use of correspondence education throughout the world. The first essay summarizes current worldwide trends and the final essay describes extension education fifty years from now. There are essays reflecting the development of correspondence education in Great Britain, Sweden, and Venezuela, in the developing nations, in frontier settings, and as part of quite sophisticated educational structures. Other essays explore the purposes of correspondence education, the role of the correspondence instructor, and the weaknesses and advantages of the correspondence method. The role of the new media in correspondence education is imaginatively foreshadowed. Techniques necessary to promote correspondence education are described and evaluation is discussed. Finally there is a review of research on correspondence study. The document is also available, for $2.00 from the University of Wisconsin, University Extension, Madison, Wisconsin 53706. 156 pages. (ly)

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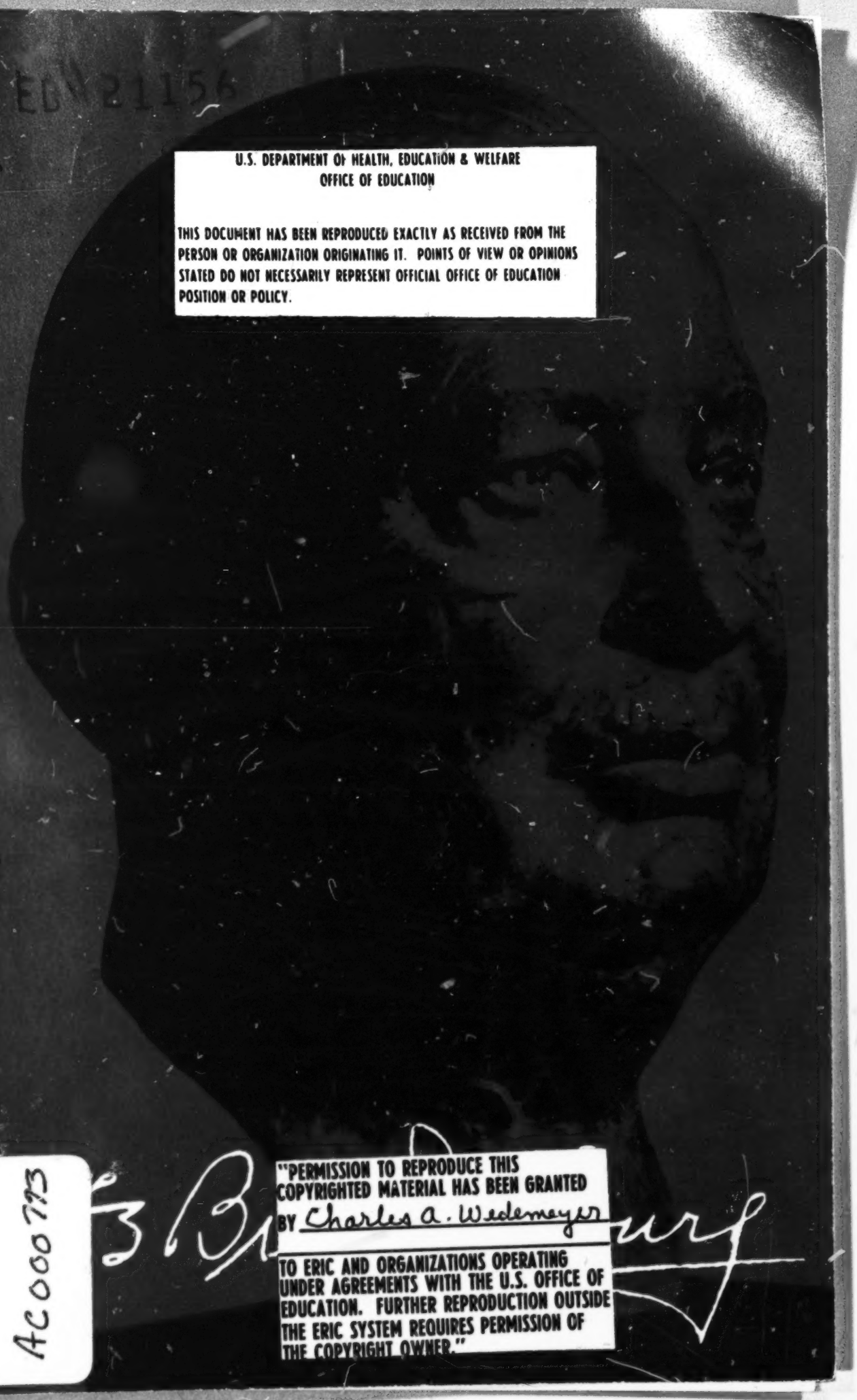
memorial essays 2

charles a. wedemeyer, *editor*



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A NOTE ABOUT HEGGIE BRANDENBURG

Frederick S. Brandenburg was a long-time friend and benefactor of Wisconsin students and international education. President of the Democrat Printing Co., Madison, Wisconsin, Madison civic leader and Rotarian, Mr. Brandenburg found time nevertheless to give encouragement and aid to many international students at the University, and to projects aimed at the improvement of worldwide understanding. He was interested in correspondence instruction because of the great potential of this method for underdeveloped countries, and because of his concern that solid educational opportunities be made available to all persons in need, regardless of their geographic location.

Upon his death in 1959, Mr. Brandenburg left provisions in his will that his successors carry out worthy educational projects through the Brandenburg Foundation, and in August, 1961, the Foundation made its first memorial grant to The University of Wisconsin Extension for the purpose of assisting the University in carrying on seminars in correspondence instruction and publishing original papers on correspondence instruction. Continuing grants from the Brandenburg Foundation have made possible this second volume of memorial essays.

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THE BRANDENBURG MEMORIAL ESSAYS ON CORRESPONDENCE INSTRUCTION — II

Editor—Charles A. Wedemeyer, The University of Wisconsin

The University of Wisconsin University Extension

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FOREWORD

This second volume of Brandenburg essays presents fresh evidence of the broadening use of correspondence education throughout the world.

The first and last essays, by Charles A. Wedemeyer, reflect the scope of the volume and indicate the new areas—geographical, educational, and technical—into which correspondence education is now venturing. From the first essay, which summarizes the current worldwide trends in correspondence education, to the final essay which describes extension education fifty years from now, we see the large outlines of change and growth.

In between, there are essays reflecting the development of correspondence education in several countries written by authorities such as Dr. Homer Kempfer of United States Agency for International Development, Mr. Harold Wiltshire and Dr. Fred Bayliss of England, Prof. Pedro Vásquez of Venezuela, and Dr. Börje Holmberg of Sweden. The essays show correspondence education in frontier settings and as part of quite sophisticated educational structures.

Other essays explore the purposes of correspondence education, the role of the correspondence instructor, and the weaknesses and advantages of the correspondence method. These essays bring to bear the mature experience of Mr. Ripley Sims and Professor Margaret Knowles, blended with the fresh insights of Professor George Hartung.

The role of the new media in correspondence education is imaginatively foreshadowed in the essay by Professors Lambert, Koenig, and Vebber; and Professor Clarence Schoenfeld

describes techniques necessary to promote correspondence education. Dean Clark contributes insights into the evaluation of correspondence education, and Professor Childs reviews the findings of research.

Brandenburg Memorial Essays on Correspondence Instruction—II fulfills the expectations raised by the first volume and broadens the context within which correspondence education is analyzed as one of the persistent forms of university extension.

Donald R. McNeil

Chancellor, University Extension
The University of Wisconsin

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WORLD TRENDS IN CORRESPONDENCE EDUCATION

Charles A. Wedemeyer*

Correspondence education is spreading rapidly throughout the world while it is undergoing change and improvement in countries that have long used this method of learning. The chief trends in correspondence education are noted in this essay.

*Charles A. Wedemeyer is Director of Instruction and Evaluation in University Extension, and Director of the experimental AIM (Articulated Instructional Media) program at The University of Wisconsin. The essay printed here is adapted from Wedemeyer's keynote address at the Seventh Conference of the International Council on Correspondence Education, June 12, 1965, in Stockholm, Sweden.

Correspondence education is responding with a vigorous dynamism to the problems of world education. This paper summarizes the results of a survey which I recently made of correspondence education authorities throughout the world, seeking evidence of trends and new uses of this method of learning.[1]

An analysis of the survey responses reveals five clearly documented trends in correspondence education as of June, 1965. In identifying the five trends which are the core of this paper, I am unable to find an order or pattern which satisfies the logical question of which comes first. Is broader acceptance of correspondence education a result of other trends; or is it a cause, or both? Since conditions vary in different countries, I have not tried to give a final answer to the question of order of cause and effect. However, I have tried to indicate in the discussion of the trends any interrelationships which the evidence suggested. As a consequence, certain reported facts of the use of correspondence education may be cited in more than one trend. The evidence yielded by the open-end survey questionnaire was, as intended, largely unstructured. Therefore the more than one hundred educators who responded to the survey are not responsible for the structure in which their responses appear here. Since the survey was intended to probe new uses of correspondence education in various parts of the world, the trend statements are supported by short summaries indicating the countries in which the use was reported. Separate institutions, agencies, or schools have not been identified in the summaries.

Trend 1. There is improved acceptance, recognition, and accreditation of correspondence education.

The survey responses were almost uniform in reporting this trend, and it is interesting to note that the responses were almost entirely non-defensive in nature. Clearly a great positive change has occurred in the acceptance accorded to correspondence instruction. Examples given by respondents in support of the trend are numerous:

• In the Netherlands, England, India, Africa, Germany, Belgium, Jamaica, Sweden, Norway, Denmark, Finland, Venezuela, Mexico, Trinidad, and the United States, there are increases in the interest and participation of official government agencies in the development, supervision,

[1] The USSR and the East Bloc countries were not included in the survey because these countries had not, at the time of the survey, participated in the work of the International Council on Correspondence Education. It is hoped that by the Paris, 1969, meeting of ICCE, correspondence authorities in East Bloc countries will have become participants in the work of ICCE.

regulation, or approval of correspondence courses. For example, in Rhodesia, a conference on adult education has recommended the establishment of an official Division of Extension Studies to expand the correspondence work in that country. In England, a working party has been set up to work out plans for a National Accrediting body in correspondence instruction. In Jamaica, the government's five-year plan for the expansion of education includes the broader use of correspondence instruction. In India, the correspondence program introduced three years ago at the University of Delhi, and regarded cynically by some at that time, has now been accorded enthusiastic acceptance and is being expanded into new areas.

• In England, Sweden, Jamaica, India, and Africa, growing realization of the need for the integration of correspondence instruction into the national fabric of education is expressed.

• In Japan, the Japanese Broadcasting Corporation has sanctioned the combination of radio and correspondence study for the provision of a four-year science and mathematics course at the high school level.

Previous meetings of correspondence educators have, somewhat defensively perhaps, reiterated the complaint that the "image" of correspondence education in the world has been negative. At the present time there is evidence that this image is changing for the better. Correspondence education is being recognized in more and more places as a respectable and effective way of learning. The work of correspondence students is being accepted and accredited at the elementary, secondary, undergraduate, and graduate levels of university education to a degree never before reported. The new prominence of "independent learning" in regular school programs may account in part for the shifting attitudes toward learning by correspondence, but there are undoubtedly other reasons also. Naturally, specific conditions are not identical throughout the world, and differences exist between countries in acceptance and accreditation, but the general trend towards improvement in this area is unmistakable.

The human aspects of the acceptance and accreditation of correspondence study are shown in this story from Belgium: A coal miner, seeking a better life for himself and his family, determined to study bookkeeping by correspondence. In five years he became a Candidate Accountant. Still a coal miner, he had never had any real experience as an accountant. Nevertheless, he got his diploma in accountancy, applied for a position with the European Committee for Coal and Iron, and found there was

a vacancy requiring a person specializing in cost accounting in coal mines. Out of all the applicants, the coal miner-become-accountant was selected and is now inspector in the organization—with a salary ten times that of a coal miner.[2]

Trend 2. There is vigorous growth in correspondence education through the offering of new subject matters, to new client groups, on new levels, with the help of new allies in sponsoring correspondence education, towards new purposes.

The largest number of respondents stressed this growth trend, which in itself may be significant. It is tempting to state merely that correspondence enrollments are increasing, but such a statement has relatively little meaning. If we look at the supportive evidence closely, we find four kinds of new growth cited, all closely related yet quite possibly of individual importance.

For example, there is new *growth in the subject matters being offered:*

- In Japan, there is a marked increase in courses typically Japanese in nature—the teaching, for example, of *shodo,* or Japanese calligraphy, the tailoring of *kimonos,* and the art of printing.
- Sweden reports the growth of farmer cooperative courses.
- Australia reports new correspondence programs in hydrography, transport administration, liquefied petroleum gas installation, and pest control.
- Italy has new programs in engineering and the English language.
- In the United States, there are new developments in the cultural, esthetic, and hobby areas and in the general liberal arts.

There is *growth in the range of client groups* being served by correspondence education. Here are a few examples:

- In Alaska, expansion of correspondence education into adult education is reported.
- Rhodesia reports that 30,000 correspondence students are studying at the upper primary-lower secondary level.
- Malawi cites the expansion of correspondence instruction into secondary levels.
- In Finland, there is expansion of supervised correspondence courses at the secondary level.
- Australia has new correspondence programs in technical areas to supplement on-the-job training.

[2] Reported by H. Verbrugge, Director, Nationale Stichting, Belgium.

- The United States is now offering engineering correspondence-type programs at the graduate level, both degree and nondegree oriented.
- Germany notes a large increase in clients in the middle age group.
- Kenya has new correspondence programs for civil service and police personnel.
- In Africa, Mexico, Venezuela, and India, teacher training courses by correspondence instruction are newly established.
- Venezuela is developing a correspondence program for apprentices, linked to practical experience.
- Jerusalem reports that correspondence instruction is used in training technicians on the job.
- South Vietnam and India recently initiated correspondence programs for army personnel.
- In Finland, correspondence instruction is being expanded for homemakers.
- Australia has new correspondence courses for the retired and the handicapped.
- In the United States, a branch of the federal government is beginning the development of a national program (based partly on correspondence instruction) for the training of nursing home administrators; another government program is being launched to train personnel working in child care centers.
- India is developing correspondence programs for the training of foreign service personnel and dependents of government workers in foreign countries.
- The United States reports new degree-oriented correspondence programs for social workers.
- Other new client groups reported by respondents from several countries include water-treating engineers, missionaries, highway personnel, younger students, older students, middle aged students, international students, and greatly broadened programs for business, industry and government.[3]

It is natural that *sponsorship should broaden* as correspondence instruction is carried into new client groups and as tighter quality control and supervision are exercised by either association or governmental agencies. Some of the new sponsoring agencies include the following.

[3] From Denmark comes the comment that population growth, the availability of more leisure time, and the need for continuing education are reasons which underlie the development of programs for new client groups.

- Dun and Bradstreet, the National Safety Council, and the Association of Medical Librarians in the United States.
- The Ministry of Labor and Department of Vocational Education in Jerusalem.
- The Adult Schools in Italy.
- Universities, ministries of education, departments of education, and specific businesses and industries in the United States, Finland, Sweden, Germany, Africa, Venezuela, South Vietnam, Japan, and elsewhere.

The growth evidence cited indicates, also, a marked *broadening of the educational levels* at which correspondence education is now being offered:

- Graduate level programs are mentioned in the United States and South Africa in such content areas as engineering and business administration.
- Practical engineering and technology are mentioned in many countries.
- Professional programs for librarians, engineers, and management have appeared in the United States and elsewhere.
- Primary, past-primary, and secondary school levels are being served for the first time in a number of countries.

For the first time, it is clear that correspondence education now serves humanity from the primary school to the graduate school.

Alongside the older purposes long familiar to correspondence educators, many *new purposes* are springing up. What is interesting here is not merely the multiplicity of purposes but the range: from the simple provision of frontier-type educational opportunity to the design of sophisticated learning systems as a part of complex patterns of education. Because I have already mentioned, in connection with other trends, some of the new purposes for which correspondence instruction is being used, let me add only a few more examples:

- In the Netherlands, correspondence instruction is being used for continuing professional training.
- In the United States and elsewhere, correspondence instruction has a phenomenal record in salvaging the hopes and aspirations of high school and college dropouts.
- In England, correspondence instruction is becoming the "second chance" school for those who missed the first opportunity.
- In Sweden, correspondence instruction is being used for the training of specialists in international correspondence instruction.
- In numerous countries throughout the world, correspondence instruction has the role of extending the formal school systems into adult (post high school) education.

- Developing countries on many continents are using correspondence instruction to meet basic education needs, including the training of teachers and civil servants.
- In South Vietnam, as in other countries during the past twenty years, correspondence instruction is being used to provide learning opportunities to members of the armed forces.
- In the United States, correspondence instruction is being used as a pretesting and pretraining device to determine the aptitude and interest of persons prior to their assignment to expensive resident training programs.
- In India, correspondence instruction is being used as an effective means of democratizing education as well as for lifelong learning itself.
- In the United States, correspondence instruction is being used for the training of master teachers in a faculty improvement program.
- Correspondence instruction as a supplement to the regular schools has appeared in Jamaica, where 15,000 pupils will prepare for the School Certificate Examination largely by correspondence. Other countries experimenting with this use of correspondence instruction are Sweden, the Netherlands, and Finland.

Most impressive in the new purposes of correspondence instruction is the conscious selection of this method in many places for the accomplishment of broad social purposes. In a sense we see here something created anew, and yet in another sense something old that is being recreated. Certainly the great pioneers of correspondence instruction (men like William Rainey Harper and William Lighty) were first of all idealists. The intimate connection between correspondence instruction and the social movements in Europe and the United States in the late nineteenth and early twentieth centuries was no accident, and we are witnessing a revival, in a sense, of the early social ideals that motivated the development of correspondence instruction years ago in another age.

An anecdote from India illustrates the effect of educational opportunity in a story about a father and his son who were both studying by correspondence for the same degree. The father wrote to the director asking permission to sit for the examination a year before the son—so that he could graduate earlier. The respondent from India goes on to observe, "Correspondence education thus has a role of democratizing education, of encouraging lifelong learning, of building morale and aiding social reform."[4]

[4] Report by Dr. Ram Bahari, Vice Chancellor, University of Jodhpur, Jodhpur, India.

Trend 3. There is continued improvement in the quality of correspondence education.

- In the United States, respondents point to tangible evidence of quality improvement, with the explanation that the public is demanding higher quality educational programs.
- In the Netherlands, mention is made of raising the level of correspondence instruction, and the interesting comment is added that maintaining the new quality levels will require larger correspondence schools with larger resources and that therefore smaller schools will have to give way to larger schools. (In Sweden, Hermods of Malmö has purchased NKI of Stockholm, creating a very large correspondence education enterprise with resources to strengthen both the quality and the breadth of content of courses.)
- An educator in Jerusalem points out that the public will not be satisfied with mediocre courses, that in fact there is public realization that only the serious and experienced correspondence schools can meet society's needs.
- Schools in several countries mention steady improvements in study guides, record systems, and the quality and rapidity of instructional services.
- Improving ratios of completion are mentioned in the United States.
- In Germany, mention is made of the significance of new quality programs in the technologies.
- In Trinidad, mention is made of improvements in the personal relationships between correspondence teachers and students.

The trend towards improvement of correspondence education is noted in another way, in the widespread changes which are being made in the basic methodology of correspondence education.

Trend 4. The methodology of correspondence instruction is undergoing change.

There is a richness and variety in the methods of correspondence instruction now evolving. Except for the earliest period which produced correspondence instruction itself, no other period in the history of this system of learning was probably as creative as the present. Never fully accepted, never accorded a secure place in the educational hierarchy, correspondence education has also never jelled, become rigid or fixed in format as did other more universally accepted modes of instruction. The

struggle for survival, in the correspondence world, has developed educators who must be more student oriented than institution oriented. Change is therefore probably more openly sought than would be the case if one were merely protecting the Establishment. The Establishment in correspondence education has been a frame of mind, an attitude towards learning, a rationale towards people and opportunity. Correspondence instruction has thus had to adapt to people, to the times, to the needs and requirements of society outside itself; and it has not expected society, its students, or the needs and problems of the period to adapt to it.

With less to risk and more to gain, correspondence educators have had more favorable inclination to change than educators in more protected and accepted forms of education.

The new technology which has developed in the last thirty years has nevertheless not been exploited by any group of educators. While specialists taught the technology which quickly found its way into almost all other purposeful human activities, educators as a group largely ignored this technology, and still do. But great changes are now occurring, and in correspondence education the changes are far-reaching indeed.

The changes are in the direction of the use of new media and new technology in teaching by correspondence, and in combining correspondence instruction with residential forms of instruction.

The references to new media and new combinations are so numerous that I can provide only a brief summary here:

- In Germany and the United States, programmed instruction is combined with correspondence instruction; and in some places, the total of educational technology and media is applied to the solution of learning problems; correspondence instruction is integrated with such other media as radio, TV, the tel-lecture system, and computerized instruction.

- In Sweden and the United States, correspondence instruction is combined with residence instruction; correspondence study is used with small groups, vacation schools; supervised correspondence instruction exists at both the high school and college levels; correspondence study is used as a companion to residence instruction; terminal seminars and counseling institutes have been set up to prepare students for independent study by correspondence. In the Netherlands also, small groups are learning through correspondence instruction with help from a mentor or supervisor.

• In the United States, experiments are conducted in the design of a systems approach to learning, in which *all* appropriate media and formats are used, including correspondence instruction, with each medium or format given the function that it can best perform, based upon the testing of formats and components and the selection of methods because of demonstrated efficiency. What is sought here is a system which reinforces correspondence study with audio and visual communication but which keeps the student free from rigid learning schedules so he can go at his own pace. For example, equipment which became available in May, 1965, in the United States, and will be available a year later in England, will enable educators to use a 33 1/3 rpm disc, played on a regular turntable with a special three-stylus pickup. The output of this system is fed into a television set and produces both sound and visuals. When this device becomes fully usable, courses can be developed which put on discs the essential audio and visual aspects of the correspondence course; thus the goal of making every home a private learning lab, not tied for audio-visual enrichment to any broadcasting or institutional scheduling but allowing learners to proceed at their own rate, with constant feedback to the instructor, will have been achieved.[5]

It is well to remember, however, that not all countries will be able to participate equally in the use of the new technology. For some countries the achievement of a swift and reliable postal service will be a distinct advance and must come before other advances in the use of technology take place. Indeed, we must remember that in many countries, correspondence education is a frontier or pioneer educational device which faces, as in this story from Southern Rhodesia, learning hazards with which the newer technology cannot cope. The Rhodesian student was preparing his correspondence lesson when it became time to milk the family cows. The student placed his lesson on the chair and started milking. Whereupon, one unattended cow—with an obvious appetite for learning—approached the chair and began contentedly chewing the correspondence lessons.[6]

Examples of specific program developments with different media include the following:

• In England, a regular university (Nottingham) has for the first time

[5] Since this summary was prepared, the American manufacturer has unfortunately decided not to proceed further with the development and production of the device described. However, two other manufacturers (one British, the other American) are developing similar devices.

[6] Reported by F. J. Vander Merwe, Southern Rhodesia.

entered the correspondence field by combining TV and correspondence study in a course on introductory economics. This course had thirteen TV lessons and twelve correspondence instruction lessons plus two local meetings and a weekend school. Some 1,656 students enrolled, and 855 completed eight or more assignments.[7] A new British private school has also launched programs combining correspondence education with radio and TV.

- Other TV/correspondence study combinations have been tried recently in Italy with do-it-yourself kits, in the Netherlands with subsidization by the government and a foundation, and in the United States.

- Radio and correspondence instruction combinations have appeared in Nyasaland, closing with a three-week residential session.

- US-AID is studying the possibility of developing radio plus correspondence instruction programs in Kenya, Uganda, and Tanzania. Malawi is using correspondence instruction and radio in secondary education, tied to small study groups. In Rhodesia, the Rhodesia Broadcasting Company is cooperating with the Ministry of Education and the Correspondence College in producing courses in a number of different subjects, with radio used as reinforcement of correspondence instruction. In the United States, a new venture called "Educasting" combines radio and programmed instruction in a correspondence format.

- Small group and residential study seminars combined with correspondence instruction are reported in Norway. In Rhodesia and Nyasaland, the Institute of Adult Education uses this format in a two-year course leading to a certificate in adult education. Correspondence instruction and small groups are a format used in Bechuanaland. In Mexico, teachers are trained by correspondence instruction plus terminal residential sessions.

- In the United States, there is an interesting experiment with "dispersed groups" which never meet face to face, in a format designed to produce by correspondence the effect of tutorial discussion.

- Programmed instruction combined with correspondence instruction is notably mentioned in Germany and the United States, with developments under way in other countries.

- The tel-lecture (basic telephone instruments modified for use with groups, for speech in both directions) combined with correspondence

[7] See "Teaching Through Television," Wiltshire and Bayliss, p. 44.

education is used so far as I can tell only in the United States. Experiments indicate that this is an effective and inexpensive system, but it does require the existence of a dependable telephone network.

- The use of discs and tapes in correspondence teaching is increasing and will probably lead eventually to the development of that private home learning laboratory I spoke of earlier. In Italy, discs are used with language correspondence courses. In the Netherlands, mention is also made of language teaching combining correspondence instruction with tapes and discs. In the United States, there is a long history of such use in several content areas. One school has recently launched an extensive curriculum of college level subjects using discs and correspondence instruction exclusively.
- In Japan, the use of stereoscopic pictures and the sending of tape recorders as instructional aids for students is reported.

The broader use of media and technology hypothesizes that such media and technics are reinforcing to correspondence instruction. It is intriguing, however, to extend experimentation and use beyond the reinforcing point. Here we confront the systems concept. Given the richness of educational technology, given the needs of students for opportunities to learn while not chained to institutional schedules, given the conditions of overcrowded conventional schools and the shortage of competent teachers, given the necessity in modern society of more and more persons continuing learning throughout their lives, given the desirability (perhaps the necessity) of learning opportunities that permit learners to start and stop at their own convenience and to move at their own pace—given all of these things, one is, I think, forced to investigate the more complete systematization of learning processes, both in conventional schools and in correspondence schools. Learning systems (using many media and formats) are now under study and being tried experimentally. Such systems will not, in my opinion, displace correspondence instruction of the conventional kind or correspondence instruction combined with other media. The learning systems concept may instead bring about a much greater use of correspondence instruction than ever before, even in conventional schools and at all levels of instruction including the graduate school. Correspondence education will, of course, itself undergo change. Via the learning systems approach, a modified correspondence education will be drawn into the mainstream of education, and its technics will be used by residential full-time students as well as part-time off-campus students.

Correspondence educators are uniquely prepared to participate in the development of learning systems, to work with specialists from other

media and with content authorities. The process of designing a course utilizing articulated instructional media (or the learning systems concept) is closer to the process of designing a conventional correspondence course or a programmed instruction course than it is to almost any other kind of educational planning. Very important in the team effort that must derive from such a concept is a concern for the human and personal factors involved in teaching and learning—a concern, to put it another way, for the dignity, comfort and convenience of both the teacher and the learner. The human factors, I believe, are more important in making progress with articulated or systems courses than are the technological. The technology is many years ahead of suitable application in education now; and the chief reason for this lag is human: teachers do not readily accept technology in their courses because they feel threatened by it. They feel threatened because they do not perceive their role in a new kind of educational process. I do not believe that systems type courses will succeed unless teachers do feel comfortable with them and enjoy the new role that courses designed in this way make possible. There is also a great fear that technology will "dehumanize" teaching and learning. With poorly done courses, this fear is well grounded. There will have to be a strong and consistent emphasis on excellence and quality in course design and development, and the place of the teacher in the system will have to be carefully explored and supported so that he does feel comfortable with, and gain satisfaction from, his new role. Here is one of the points at which the correspondence educator will be useful, for his experience in designing courses for a one-to-one personal relationship between the teacher and learner who are separated is likely to be a key factor in the design, acceptance, and success of the new type courses.

We often state that there are certain subjects (like flying airplanes and swimming) that correspondence cannot yet teach, and we look to the new technology to find ways of doing many things not now thought possible. It is surprising, therefore, to learn that the first United States military pilot, Major General Benjamin Foulois, bought his first airplane (delivered unassembled in a crate) from the Wright brothers. A great distance from Kitty Hawk, Foulois and his colleagues had to correspond with the Wrights on how to assemble the airplane. After they had put the machine together, they didn't know how to fly it; so they and the Wrights corresponded again on how to fly and pilot the plane. Foulois thinks he's the only pilot who learned to fly by correspondence![8]

[8] Reported by Dr. Robert Allen, Miami University.

Trend 5. There is growth in research and experimentation in correspondence education.

A notable increase in research and experimentation in correspondence education is indicated in responses to the questionnaire. What is not discernable is whether the studies and experimentation are formal; that is, whether studies and evaluations will be published and made available to correspondence educators throughout the world. There has been a feeling among correspondence and other educators that the professional literature in correspondence education is slight. Perhaps by comparison with some other educational fields this is a fair estimate; but the professional correspondence education material that does exist is not slight, as Dr. Childs of Nebraska and his research committee have discovered in attempting to catalog and annotate the literature of the field. The preparation of a basic bibliography of correspondence education is badly needed. What is slight is the monetary support given to correspondence research projects, and the small number of persons who have been able to devote time to this important activity. It would seem highly desirable that ICCE, UNESCO, NUEA, NHSC, and the new CEC, as well as other regional associations, work out a joint project designed to bring about, by the next meeting of ICCE in 1969, an international bibliography, fully annotated, so that researchers, experimenters, and correspondence educators generally may have the benefit of the work done by others in the world without having to repeat mistakes, go down the same blind alleys, or replicate unaided the significant contributions of the pioneers and front-runners of correspondence education.

Part of the difficulty of the literature of correspondence education is that much of what has been written is fugitive. It takes patient checking to locate reports, which often are out of print and completely inaccessible. The lack of an international journal for correspondence education is also a disadvantage. These are not new observations, of course. What may be new in the field today is a heightened awareness of the importance of formal research and experimentation. Here are a few examples:

- In the United States, the American Council on Education is sponsoring a broad study of the role and status of correspondence education, under the direction of Dean Ossian MacKenzie. The idea for this study came from the NUEA and received the support of the NHSC.

- In Germany, there is an increase in the study of correspondence education by M.A. and doctoral candidates in the universities.

- In Sweden, Norway, Denmark, and the Netherlands, there appears to be a marked increase in the publication of professional articles in the field of correspondence education, encouraged perhaps by the formation of the CEC.

- In Venezuela and other Latin American countries, the first articles on correspondence education have been noted. The Pan American Union has sponsored a series of articles in the field, and US-AID and Venezuelan educators have prepared a Spanish translation of the Wedemeyer–Childs book, *New Perspectives in University Correspondence Study*.

- UNESCO has shown, both by its interest in this conference and by its commissioning of a basic primer on correspondence education for developing countries (prepared by Renée Erdos of Australia) that the literature of correspondence education must be made generally available. I believe it is the intention of UNESCO to follow publication of the primer with a series of more specialized books taking up various aspects of correspondence education.

- Under the impetus of NIB (now SIDA—the Swedish Institute for Developing Areas) there has begun what may turn out to be a most fruitful investigation into the contributions that correspondence education can make to developing countries.

- In England, the Ditchley Foundation is sponsoring an Anglo-American study conference on the techniques (including correspondence education) of education needed in developing countries.

It seems self-evident that research, experimentation, and publication for an increasingly sophisticated and critical worldwide audience are logical derivatives of the earlier trends mentioned. This trend is noticeable and genuine, but it needs to be carefully nurtured to complete the destruction of a past-noted tendency among some correspondence educators: to keep their knowledge to themselves for their own advantage. The professionalization of correspondence education makes such an attitude anachronistic.

The five trends I have identified from the comments and observations of respondents are, of course, to a considerable extent interrelated; nevertheless I believe they are genuine trends, confirming in the main the observations that one makes from a continuing appraisal of correspondence instruction through reading, correspondence, and visits to other countries. Yet it must also be pointed out that trends are trends only; they are not necessarily fully established and certainly not irrevocable or irreversible.

Finally, it is abundantly clear from the evidence used to identify and describe the trends that talent, technical ability, insight into social needs, inventiveness, knowledge, and scholarship are not limited to any one area of the world or any one country. The dynamism that is evident in the present workings of correspondence education is indeed worldwide.

Charles Wedemeyer

CORRESPONDENCE EDUCATION IN DEVELOPING COUNTRIES

Homer Kempfer*

At least twenty developing countries have begun programs of correspondence instruction or expect to do so in the near future. Lacking rigid institutional patterns, these countries may put to use on a large scale what the technically advanced countries have shown experimentally but have never applied full scale.

*Dr. Homer Kempfer is Chief, Eastern/Southern Branch, Education Division, Bureau for Africa, United States Agency for International Development.

At least twenty developing countries have recently started programs of correspondence instruction or expect to do so shortly. The following paragraphs are condensations of reports given at the Seventh International Conference of the International Council on Correspondence held in Stockholm, June 13 through 17, 1965.

Algeria. Correspondence lessons are printed in newspapers, and responses are sent in by any interested person to the correspondence center for instructional service. The aim is to offer wide opportunities for education.

Ethiopia. Haile Selassie I University is preparing correspondence courses for the upper two secondary grades and hopes soon to add correlated radio instruction.

India. In 1962, the University of Delhi started a full B. A. Pass course by correspondence-cum-short-resident-periods and nearly doubled its correspondence enrollment by 1964. Correspondence instruction is being extended to other universities and is being planned for in-service training of up to 400,000 underqualified primary teachers.

Indonesia. Correspondence instruction is reportedly in use for in-service training of teachers and in certain trades.

Israel. Extensive correspondence courses in business, trade, technical, and academic fields are in operation.

Jamaica. A sizable correspondence program has developed with advisory assistance from the USA.

Kenya. Planning is under way to train teachers in service by correspondence in conjunction with other media. One private school alone has an enrollment of over 20,000 students in the three East African countries —an indication of interest.

Malaysia. Academic, business, trade, and technical courses have been in operation for several years. The program is growing rapidly.

Malawi. Enrollment in lower levels of secondary education by correspondence started a few months ago and is expected to reach 3,000 to 5,000 in two years. The correspondence program is operated in close conjunction with local education officers. Full secondary curricula are being planned. Correlated radio broadcasts have started and will be greatly increased as soon as the US-AID/University of Missouri contract provides an educational radio specialist.

Nigeria. Correspondence instruction is used in limited ways in certain areas. The US-AID is trying out International Correspondence Schools courses in management training in industry.[1]

Rhodesia. Over 60 per cent of all Africans in Rhodesia pursuing secondary education are doing so by correspondence study.

South Vietnam. Correspondence instruction is operating under great supply and organizational handicaps, largely with volunteer teachers, primarily to provide continuing education to the armed forces.

Tanzania. A limited experimental program for upgrading primary teachers in service through correspondence and vacation classes is showing favorable results. The Ministry of Education is interested in upgrading 11,000 teachers in service by offering English and other secondary subjects by radio-correspondence-practice groups plus resident instruction in vacation periods. A University of Wisconsin team has conducted a reconnaissance study in Tanzania, Uganda, and Kenya in preparation for a long-range training program in correspondence education.

Turkey. A growing list of trade and technical subjects is offered by correspondence. One AID participant is undergoing training in course writing in the USA in 1965–1966.

Uganda. With a TV signal able to reach 90 per cent of the population by the end of 1965, the government is interested in combining supervised correspondence instruction and educational TV in secondary schools.

UNRWA. This UN agency is using correspondence instruction combined with discussion circles and occasional field visits to groups to upgrade about 4,000 primary teachers in refugee areas of the Gaza Strip, Jordan, Lebanon, and Syria.

USSR. Correspondence instruction was started early in the postrevolution era and has continued to play an important role in development. Often it is closely related to and supplemented by resident instruction. Enrollment runs into the millions.

Venezuela. Under an AID contract with The University of Wisconsin, the National Institute of Cooperative Education has started correspondence courses in mechanical trades and expects to expand into other subjects soon.

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[1] The University of Ibadan is planning a correspondence-radio education program with the assistance of The University of Wisconsin. The University of Nigeria at Nsukko with the assistance of Michigan State University is also interested in establishing a program.

West Indies. Only private correspondence schools serve the area outside of Jamaica. They enroll several thousand students annually.

Zambia. A correspondence program offering the first two years of secondary education started in mid-1964 with 150 students. Plans include expansion to 1,000 students by the end of 1965 and extension of courses up to University entrance. Radio will probably be added as soon as facilities are available and enrollments justify. The new University of Zambia expects to include correspondence instruction as a part of a strong extension department. One AID participant underwent training in correspondence materials preparation for five months in the USA in 1965.

INTEREST IN MODERN TECHNOLOGICAL APPROACHES

One-half of the above reports indicate that correspondence instruction is used in combination with other media or approaches. This interest was much in evidence at the ICCE conference. As political and educational leaders have usually been educated in conventional teacher-classroom situations, one may wonder why they are interested in non-classroom approaches.

The reasons are simple. The tide of rising expectations is surging upward fast, especially in newly independent countries. In older developing countries, the younger generation, stimulated partly by newer communication media, becomes aware that changes in social institutions are necessary if a better life is to be realized.

Education is often seen as a major key to opening the door to the future. Consequently, national development plans usually show high targets in education. The targets are more often expressed in terms of needs and aspirations than in terms of economic and personnel resources.

But historically the spread of education has been a slow process. School buildings are expensive. Classroom equipment and books cost money. Training a corps of teachers takes a decade or longer. The acquisition of literacy itself requires many hours of disciplined work with which illiterate and primitive peoples may not be familiar. As difficulties in meeting targets become apparent, political leaders become sensitive to the promises they have made. They and educational leaders become interested in other than conventional teacher-classroom approaches to education. Yet they may not really understand the capabilities and limitations of other approaches.

Some countries have experienced such failures with literacy campaigns that they even question whether or not literacy is necessary. Often they

wonder whether or not literacy might be bypassed by the mass communication media and knowledge communicated directly orally and visually.

The logistics of the problem of moving knowledge from where it is to where it ought to be, combined with an awareness that technology can help, presents a formidable challenge.

Educators acquainted with various media and approaches recognize that each has its strengths and weaknesses—its appropriate uses and its limitations. A review of research and experience reveals the kinds of results to expect from controlled inputs into educational TV, educational radio, audio-visual aids, correspondence instruction, and to lesser extent, programmed instruction. In sophisticated educational circles, the capabilities of these media are fairly well known. Furthermore they are subject to far greater refinement and quality control than are the methods of classroom teachers.

Inasmuch as expatriate teachers are in short supply, expensive, and foreign to the local culture, they cannot be a practical permanent solution. Developing countries must look for other means or else resign themselves to the slow development of their own cadres.

Correspondence instruction with its generations of successful use offers a significant and economical means of providing education wherever postal systems are sufficiently developed to carry the load. When used alone in developing countries, however, correspondence instruction often shows up weaknesses in addition to those common in more advanced countries. Unless there is a sizable literate adult or parental group, correspondence cannot provide much elementary education. Secondary students used primarily to oral teaching without abundant use of textbooks, find it difficult to take hold of self-study materials. For these reasons, integration of correspondence study on a supervised basis in schools strengthens the method considerably. When the few available teachers can be oriented into its proper use, supervised correspondence study can carry half or more of the instructional load.

Where radio receivers are widespread, as they are in some developing countries, radio instruction adds interest, stimulates regular study, and in some subjects such as languages, can carry a major part of the instructional load.

Educational TV is a powerful media extending vision, motion, and a much wider range of subjects. In fact, it could carry a heavy portion of the teaching load if it could provide for adequate student response and assessment of learning which correspondence instruction provides.

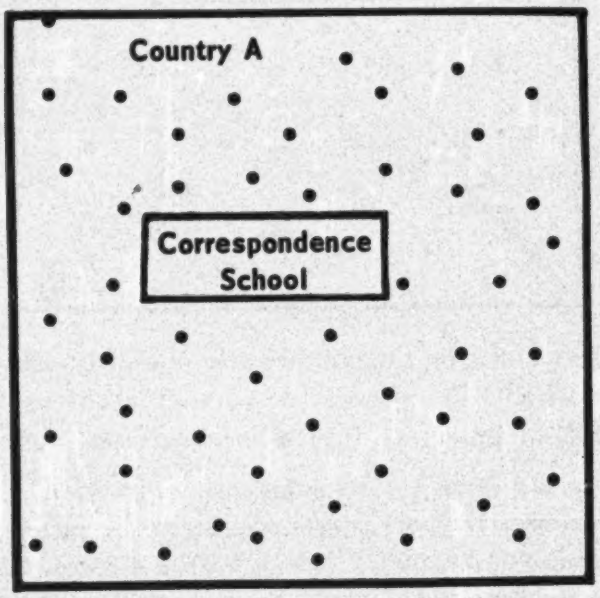
Receiver installation costs in schools are high and the approach uneconomic unless enrollments are large and a sizable program offered. Program production and broadcasting costs are essentially constant whether for small or large enrollment. In most cases, broadcasting equipment is installed first for public informational purposes although occasionally a country installs broadcasting equipment specifically for educational use.

Programmed instruction likewise catches the eyes of developing countries although, to date, skills of program development and high costs have prevented significant headway.

The significant new element in the use of correspondence instruction is combining it with appropriate other media and approaches into an educational system tailor-made to serve the purposes desired. The following were six models proposed at the ICCE conference to serve some selected purposes in specific developing countries:

Country A

Need: Secondary education and occupational training for employed adults. Several thousand secondary graduates are needed to operate government, industry, and agriculture.

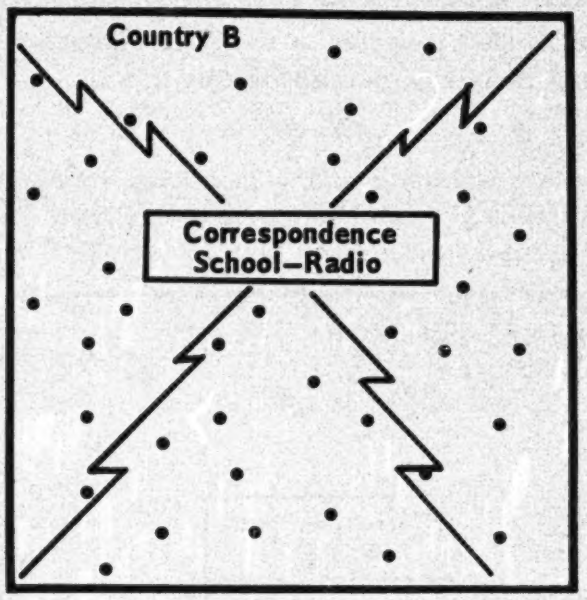


Situation: Sizable numbers of primary school leavers and secondary dropouts are employed in essential positions. They are usually undereducated for their responsibilities. The country has a half dozen low-secondary trade schools with fewer evening schools and other occupational training opportunities.

How: Establish a central correspondence school offering secondary subjects and trade training. Use primary teachers, postmasters, missionaries, employers, and governmental officials as promoter-registrars. They could pass out information, help applicants register, give encouragement, and be the connecting link to send and receive materials from the correspondence center. Successful students could be enrolled in vacation-period on-campus classes for laboratory and shop instruction. When ready, they could take periodic examinations.

Country B

Need: Secondary education for large numbers of primary school leavers.



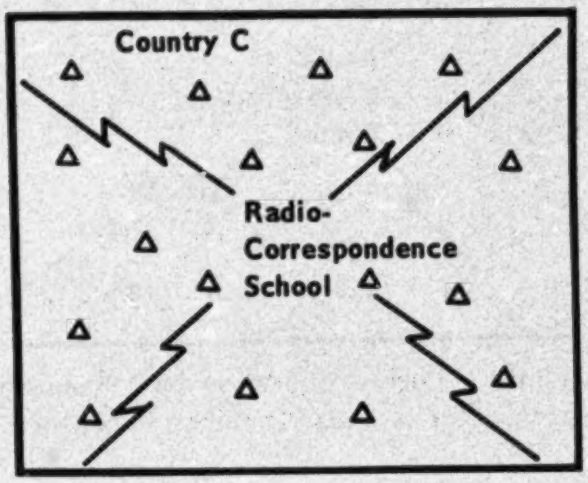
Situation: Only 6,000 of 120,000 primary school leavers can find seats in a secondary school. The country desperately needs tens of thousands of secondary school graduates for essential services.

How: Use semisupervised correspondence instruction in out-of-school hours. Induce primary teachers and headmasters to register candidates for secondary education and serve as liaisons with the correspondence school. Many primary teachers could study secondary subjects simultaneously.

Add to this picture vacation-period on-campus laboratory and shop training and radio lessons after school hours. Give students study space in classrooms in the early morning, late afternoon, and evening hours. Arrange other study space in the community as necessary.

Country C

Need: Greatly expanded secondary education.



Situation: Moderate amount of school space is available but the country has an extreme shortage of native teachers. There is heavy dependence upon expatriates, at high cost to the government.

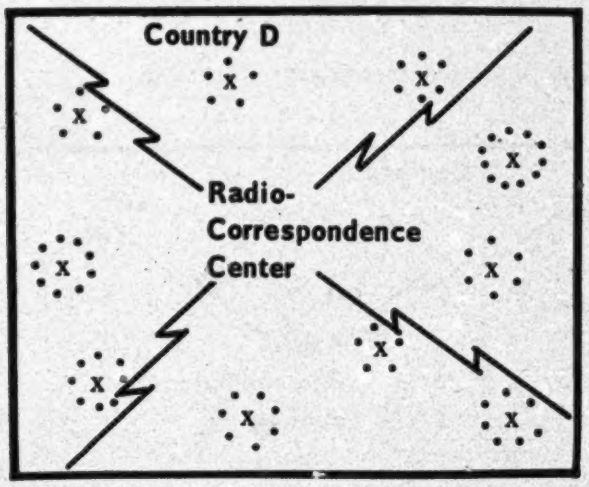
How: Provide supervised correspondence study in secondary schools, with laboratory instruction arranged in daily schedules. Half or more of the instruction could be carried by correspondence. Radio and/or TV instruction could be added if synchronized with daily schedules. A second shift in the late afternoon and evening could more than double enrollment. A few teachers to supervise correspondence instruction, teach laboratory classes and social skills, and provide guidance could handle sizable enrollments.

Country D

Need: Primary teacher training.

Situation: About 11,000 primary teachers, weak in English, are expected to introduce English as a second language in third grade and teach it in the remaining primary grades. Most of them have had eight years of schooling plus two years of teacher-training conducted in English. The government is demanding upgrading of teachers within five years or replacement by better-trained teachers.

How: Provide radio instruction through school radios after school hours to listening-practice groups, with individual study of integrated correspondence lessons, many self-checking exercises, and examinations

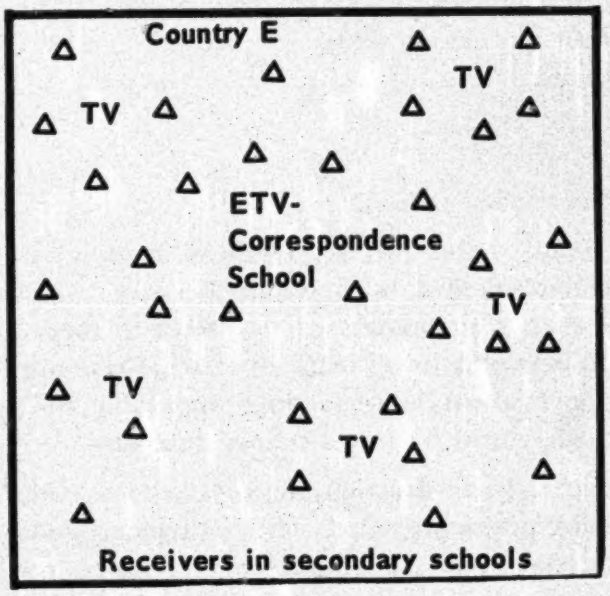


mailed in periodically. Other secondary subjects should be added later. This is in preparation for secondary Cambridge School Certificate level examinations.

Add to this, vacation-period instruction in teacher-training colleges. All secondary subjects can be prepared in integrated correspondence and radio tape form to be revised and repeated as necessary. Materials would be usable in other countries using Cambridge School Certificate examinations.

Country E

Need: Expansion of secondary education with very few native teachers.



Situation: There are rapidly growing primary output and slow-growing school buildings. Secondary teachers are chiefly expensive expatriates. Population is dense in a compact country. The TV signal will cover 90 per cent of the population in 1965. Few sets are available.

How: Introduce educational TV into secondary schools to carry up to 80 or 90 per cent of the instruction. Select 30 to 40 of the best native teachers in the country to teach on TV. Train young adults with primary education to handle audio-visuals and supervised correspondence study materials, records, logistics, and general services under supervision of small corps of trained teachers who would supervise local schools.

Establish a national instructional center to prepare TV instruction, visuals, and correspondence materials and to train local teachers and assistants in their roles.

Country F

Need: Secondary education in twenty-eight new schools.

Situation: Newly built schools will be widely scattered with a capacity of 840 students each. From 200 to 300 foreign teachers will have to be imported each year for five years as the schools fill up with five successive classes. University has not yet started. Native-trained graduate teacher output is five years away. The country is comparatively rich, with TV in only one densely settled area. Population in the remainder of the country is widely scattered with a few concentrations.

One secondary school in Country F

1 headmaster
1 TV-electronics technician
6 subject department heads
35-50 native assistants, e.g., math head
6 assistants using correspondence materials, radio, TV, film, A-V aids
840 students in 5 grades

How: Establish a national instructional center to prepare TV, correspondence, and related materials. Install language laboratories, open or closed-circuit TV, and other electronics and technological equipment as a survey would indicate.

Staff each school with a headmaster, a TV-electronics maintenance technician, and a half-dozen subject department heads. Each department head would have six to eight native assistants of tenth grade education to perform miscellaneous duties connected with instruction and administration. Department heads would organize, train assistants, supervise, arrange, counsel, and plan. Assistants would handle equipment and audio-visual aids, distribute and collect materials, administer tests, keep records, handle logistics, and assist with social and interpersonal training.

NATIONAL INSTRUCTIONAL CENTER

A national instructional center would cap the educational system of a country. It might require a staff of fourteen or so foreign specialists to produce the new educational programs and to teach local school staffs how to use them. On the team would be about six highly competent teachers of major subject areas also sophisticated in curriculum and methods. Two educational radio and two educational television (ETV) specialists would be available to work in those subjects best taught by each media. Four specialists in correspondence instruction and materials preparation including audio-visuals would be responsible for all instructional material aside from radio and TV scripts.

Alongside the specialists would be about thirty of the best local teachers for radio or TV program production and another thirty to prepare correspondence, audio-visual, and other instructional material.

Within any subject field, the subject specialists, one in correspondence instruction and one in the media, would work with their four to twelve local counterparts and build an integrated instructional system so that the broadcast media and all written materials would constitute an integrated package. Given a few months lead time, such teams could tape programs and prepare materials and then go to the field to see them in use. This evaluation would give some of the feedback necessary to intelligent revision and improvement of future materials.

An intensive program of training the teachers in the schools in the use of radio, TV, and correspondence instruction would necessarily have to go on prior to and during the early years of the new program. The national center staff would be responsible for these regional and district educational officials.

A staff of this size presumably could develop the entire first-year program for all the secondary schools of a nation. Both foreign specialists and local staff should improve with experience so that later programs and materials would be better than the earlier ones. Presumably they could move into the second year much better equipped and working as a team with such efficiency that second-year revision could be done with surplus time and energy resulting from the first year's learning. This process could continue through all the secondary years and result in a library or storehouse of tested and revised materials. The revision process, of course, should never be finished, although in time the expatriates could withdraw.

The annual cost of such a center might be:

Fourteen specialists each at $25,000 per year (all costs)	$350,000
Sixty local staff each at $2,000 per year	120,000
Support staff	50,000
Amortized cost of studios, equipment, etc.	70,000
Consumable supplies, travel, incidentals	110,000
Annual cost	$700,000

COST OF ONE SCHOOL—MODEL F

A principal and forty qualified teachers would be needed to operate one school along conventional lines once it became filled to capacity with 840 students. From available expatriate sources these would cost either the donor or host country an estimated $10,000 each per year. This makes $410,000 in faculty salaries annually until expatriates could be replaced by local teachers.

The cost of using modern technological approaches in a school of this size tied into the national instructional center serving twenty-seven other schools could be itemized as follows:

Eight foreign specialists at $10,000 each	$ 80,000
Forty native assistants at $1,500 each	60,000
Correspondence instruction costs (materials and services)	40,000
Share of national instructional center costs	25,000
Ten TV and ten radio receivers; three channels of closed-circuit TV; plus 20% annual maintenance: amortized over five years	13,000
	$ 218,000

Annual operating costs of twenty-eight schools of 840 students each:

Operating along conventional lines	$11,480,000
Utilizing modern technological approaches (Chiefly ETV, radio, and correspondence instruction)	6,104,000

Presumably the course of study, instructional materials, audio-visuals, methods used, and instructional processes would be distinctly superior to those prepared by hundreds of separate and uncoordinated classroom teachers in twenty-eight schools. The materials would be usable, with appropriate equipment in many other smaller secondary schools already existing in the country. Laboratory equipment need not be more and could well be less expensive than in conventional schools. Big or expensive demonstration apparatus need not be duplicated in every school if the TV demonstration were clearly presented. Building design could well be adapted to the modern technologies but need not be more costly.

The annual cost of running the schools, inclusive of amortized capital outlay, would be cut nearly in half. Furthermore, the program could be operational much sooner than if it had to wait on the training of conventional teachers. If a country had ten years of successful experience with such a program, it would not want to revert to traditional teachers in conventional classrooms. A permanent breakthrough in institutional development would have been made.

CHANGING ROLE OF THE TEACHER

Obviously an approach combining correspondence instruction with ETV and radio represents a major shift in role. The educational process and staffing pattern would be radically restructured.

Top specialists in the center would be professional experts in educational program design, curriculum, materials development, teaching methods, and presentation. Under their supervision would be several types of specialists in the specific subject methods and materials areas.

The greatest change would be at the local school level. Here the few subject teachers would cease to be generalized craftsmen each performing all the conventional classroom tasks. Selection, organization, and presentation and informational and skill subjects would largely be left to those at the TV and correspondence center. Local teachers would have major responsibility for those elements which cannot be taught well by the mass media—human relations, sensitivity training, teamwork, conversational skills and social behavior, practice in manipulation of shop and laboratory materials, group problem-solving skills, and counseling. Insofar as conventional teachers are not now trained in some of these fields, their

training would have to be supplemented. A major responsibility of the center staff would be to train the "consumers" of center products—the teachers in the schools.

Much of the routine work, rote drill, remedial work, laboratory work, exercise checking, distribution and collection of materials, record keeping, and other logistic support would be handled by the native assistants. (They, too, might be acquiring a secondary education simultaneously.) This means that the subject matter department head would, in a sense, be the captain of a local team-teaching group. He would need to organize, train, and supervise his team members.

The emerging local teacher, while sloughing off certain responsibilities, would carry a broader range of responsibilities and would change his role considerably.

1. He would realize that acquisition of knowledge is only one early, although important, step in the problem-solving process.

2. He would teach teamwork and group problem-solving skills.

3. He would need new insights from the several behavioral sciences—not only an understanding of individual psychology.

4. He would be sensitive to new social expectations regarding human development, elimination of failure, and other goals of a better society.

5. He would do broad-based planning of educational experience. He would be more of a manager-planner than a source-transmitter of information. He would be a master of process and less concerned with content which can always be obtained from experts and cultural heritage sources.

6. He would use all means and technologies necessary to carry out the planned program with maximum efficiency—ETV, radio, programmed instruction, audio-visual aids, and other technologies and extension methods including correspondence study.

7. He would assist with education throughout life.

8. He would spend less energy in routine drill but would depend upon technology and lower echelon cadres to provide necessary repetition.

9. He would do less clerical and administrative work and thereby be freed to do more professional and educative work.

10. He would be a professional working at essentially the same level as a physician, an engineer, or an attorney.

Implied here, of course, is a considerable orientation of preschool as well as in-service teacher training programs.

ISSUES

If correspondence instruction is combined with other extension and technological approaches and the whole integrated into a national educational system, several problems and issues arise.

Who should own and manage the system? This question may seem extraneous when the principle of public responsibility for education seems to be widely accepted around the world. Theory aside, the fact remains that in many developing countries public bodies have not yet established the variety of kinds and quality of education needed. Aside from limited capital and trained human resources, often the understanding of possibilities is restricted. Political and educational leaders usually have come up through conventional (and often antiquated) teacher-classroom systems. Most development plans project ambitious building and teacher education schemes which usually are behind schedule.

Private schools, both classroom and correspondence, have stepped in to serve a sizable fraction of the unmet need. The 20,000 annual enrollment by one private correspondence school in East Africa approximates the combined enrollment in the first year of secondary schools in the three countries. When enrollments of other private correspondence schools are added, the number exceeds the first-year secondary enrollment. In addition to providing secondary, trade, technical, and business education, private correspondence schools are already cooperating with governments in the training of teachers and are prepared to do more.

The question which has to be resolved in each country is whether or not private correspondence schools, sometimes indigenous and sometimes foreign, should play a greater or a lesser role in the educational system. Should the government try to establish a correspondence program if a private school is doing or can serve the need? Should the government engage by contract or subsidy the services of private schools? When all educational resources are sorely needed, how can available ones best be marshaled?

No attempt at suggesting a policy will be made here. Prevailing social and political philosophy, the varying educational needs and resources present, and the quality of correspondence instruction are among the variables which will determine the solution.

Should systems of correspondence instruction cover national or international geographic areas?

One idea seriously suggested at the recent ICCE conference was that a centralized multilingual correspondence institution in Europe be established to serve the developing areas of the world. Good courses presumably could be translated into whatever languages may be required. The advantages and economy of centralized research, course development, and instructional service presumably could be worthwhile.

Neat though such a scheme might be, it does not fit the realities of the developing world. Nationalism is strong in developing countries, at least among the leaders. Dependence upon a European center would do nothing to reduce colonial ties with all the memories of economic and educational imperialism.

Pedagogically, mere translation is seldom sound. Adaptation to the culture is essential and usually as difficult as preparing original courses. Good instructional material is not pure encyclopedic information equally good in every culture. Tropical Asian, African, and Latin American countries do not need the detail of British or French or German history, literature, or political science that may even be under review for obsolescence in the home country. Mathematics and science may be purer subject matter, but even here needed adaptations are considerable. Problems involving fireplace construction, urban living, family relations, principles of government, sociology and psychology, suitable to advanced Western cultures, can look terribly irrelevant out of context.

The problem of curriculum—what to teach—difficult in advanced countries, is compounded in developing countries. Replacement of foreign with local pictures is the simplest of problems. It is likely that economies and efficiencies will disappear or be impossible if remote armchairists attempt to select and adapt subject matter to native idiom, life experience, and value systems.

Yet, there need not necessarily be a repetition of the curriculum and materials production process in every country. Countries using the same *lingua franca* and having a similarity of culture can interchange materials. Mathematics, science, and foreign languages often need little adaptation from one country to a neighbor. Geography may require a bit more. Elements of world or continental history can be much the same with only the local or regional history added. Even civics can have considerable similarity of content although the political history, forms, and ideals will need to be tailored to each country. In many subjects the

main body of content could be the same with national adaptations presented as supplemental material.

So that small countries in the same region can prevent the uneconomic situation found in the correspondence departments of our universities (where each of a dozen may offer essentially the same course to a few score enrollees), a mechanism of coordination is needed. Much of the work could be divided among cooperating countries and interchanged freely. Even if each country produces its own materials, free interchange could offer the benefits of letting all have access to the best any country could produce. All could be enriched thereby. One or more teams of specialists working on a regional basis could be one means of facilitating the interchange. Regional organizations such as the East African Common Services Organization or the University of East Africa with constituent colleges in each of three countries could sponsor regional development of materials. The Organization of American States, the Organization of African Unity, and other regional bodies could possibly sponsor such projects or at least facilitate the interchange.

Whether the program is carried forward nationally or internationally, it is entirely possible that some of the developing countries may pick up and use modern technologies for their educational purposes. Not having an extensive system of institutionalized patterns standing in the way, they may demonstrate on a large scale what the technically advanced countries have shown experimentally and in pilot projects but have failed to install in the face of a relatively rigid institutional structure. If such should become the case, it might be time for the advanced countries to learn from the newcomers.

Homer Kempfer

TEACHING THROUGH TELEVISION

Harold Wiltshire and Fred Bayliss*

Wiltshire and Bayliss, in this interim report, describe the rationale, procedures, and conclusions of the Nottingham experiment with television and correspondence teaching. The significance of the experiment may go beyond the broadening of educational opportunity in England to the use of the Nottingham format in developing countries.

*Harold Wiltshire is Director of the Department of Adult Education of The University of Nottingham, Nottingham, England. Dr. Fred Bayliss is a tutor in the Adult Education Department of Nottingham. The Nottingham experiment in teaching extramural students by a combination of television and correspondence-type lessons was carried out under the direction of Mr. Wiltshire. Dr. Bayliss developed the materials for the course and supervised the project.

FOREWORD

A venture of this kind involves the cooperation of a great many people, and though I should enjoy setting down all their names, the reader would certainly find the list long and might find it tedious. But there were a few upon whom everything depended, and I cannot forgo the pleasure of expressing my gratitude to them.

First, four people who gave help and encouragement in the early and critical days when they were much needed: Mr. Norman Collins (Deputy Chairman of Associated Television, Ltd.), Sir Miles Clifford (then Director of the Leverhulme Trust Fund), Dr. B. L. Hallward (then Vice-Chancellor of the University of Nottingham), and Sir Edward Boyle (then Minister of State for Education).

And then the four people who really did all the work: my colleagues Dr. F. J. Bayliss and Mr. Walter James, who planned and wrote the course; Mr. R. B. Cant of the University of Keele, who presented the television programmes; and Mr. Kevin Shine of ATV, who directed them.—*Harold Wiltshire*

THE ORIGINS OF THE COURSE

First Principles

Education is the sustained process of causing people to learn and this is something that television programmes, by themselves, are unlikely to be able to do. They may present us with new facts, new skills, and new concepts; but these, though they interest us at the time, will be forgotten if they remain inert. If they are to be learned, they must be used: We must make an effort to remember the new facts, practice the new skills, try out the new concepts and ideas. And we must also make an effort to relate them to our existing stock of information, skills, and ideas, for all education is a manipulation of the past as well as the future, a continuous process of reordering, reorientation and reappraisal, not just a mechanical adding of new facts to old. This is what makes it so interesting.

If the television programmes are on a subject in which we already have a strong interest and a considerable degree of mastery, we can do this for ourselves. But most of us most of the time need help to be effective learners; this is why we have teachers and classes and courses and textbooks and all the other things that go to make up a teaching system.

If television is to teach, it must reach out beyond the screen and engage its viewers in some such planned process of learning. It does this in school television where its programmes are built into a highly formalised teaching system. But can it do it in adult education, where such a teaching system—the schools, the staff, the agreed syllabuses, the common examinations—hardly exists? Can we create a teaching system for this special purpose of teaching adults through television? What would be its essential components?

1. Television programmes cannot be packed egg-tight with matter, for the viewer cannot control their pace or turn them back to have another look at a point he has missed. These are the great virtues of print: You can read at your own pace and you can turn back and reread. So there has to be some print: references to books; probably a specially written textbook.

2. Viewers can now look and read, but they need also to do regular exercises, to rehearse facts, practice skills, use ideas. And they need to have their exercises corrected so that they may learn from, instead of being misled by, their errors. They need, in fact, courses and teachers. But adult students are not conveniently gathered together in schools and colleges; they are scattered individuals viewing and reading and working at home. The only kind of teaching that can reach them all, that can go wherever the television programmes can go, is correspondence teaching. So there has to be a correspondence course.

3. Our viewers are now becoming students. But a postal link between students and tutors has its obvious limitations: It is difficult for the tutor to see on the evidence of written answers alone just what a student's difficulties are; and even if they are seen and understood, to deal with them by correspondence may be a laborious business for both parties. Talking is a much swifter and more sensitive means of communication. So there have to be face-to-face meetings between students and tutors.

4. Working in isolation, even with the stimulus of a weekly television programme and correspondence course, can be a discouraging business. Just as much as they need to meet tutors, students need to meet one another, to realise that their difficulties and their pleasures are shared by others and to check their preconceptions and their progress against those of others. So, for reasons more positive than the obvious ones of finance and of staffing, the meetings with tutors should be group meetings.

5. Any good teacher is continually responsive to his students, adapting his teaching to the cues provided by comment or question or even changes of posture or expression. Such flexible response is a normal part of face-to-face meetings and correspondence teaching but difficult to provide in a series of television programmes or a printed textbook. Yet neither need be completely cut and dried, recorded and printed, before a course begins. As much room as possible must be left for material which is responsive to students' needs as shown by their performance.

6. If there is such a degree of flexibility, there must be some machinery for monitoring both students' exercises and tutors' comments and for collecting the information which is to be fed back to those who are writing television programmes and printed material.

How It Began

This seemed a possible way of building television into a teaching system, but whether it could be done in England and whether if it were done it would attract and hold enough students to justify it we did not know. Our only exemplars were American ones, notably Chicago's TV College, and these were not uniformly encouraging. But we could but try, and so floated the general notion in an article which appeared in the Times Educational Supplement in January, 1963. The response was, of course, mixed: common objections were (a) the number of students would be too small to justify the use of such a costly medium as television, or (b) the number of students would be too large to be handled by a university adult education department, or (c) both at once. But there came, quite unexpectedly, an expression of warm interest from Norman Collins, the Deputy Chairman of ATV, and this encouraged us to think of a possible pilot scheme in the Midlands.

It would be tedious to describe all the negotiations that followed. We had to persuade the various committees of the television companies concerned (ATV and ABC) to include such an experiment in their budget and in their educational programme, to get the formal approval of Nottingham University and of the Department of Education and Science for the diversion of teaching resources to the project, and to find the money to pay tutors, set up a correspondence course, print a handbook, advertise the course, and meet some of the production costs. The money was provided by a generous grant from the Leverhulme Trust, and by February,

1964, we were committed to putting on the course which we had talked about for so long; it gave us the fright of our lives. We pulled ourselves together, calculated that we should need six months to write the scripts and the handbook, work out the exercises, recruit tutors and plan publicity, and engaged to begin broadcasting at the end of September, 1964. Even so, we had no time to try out material and exercises on students, and we made mistakes which we should not have made had we been able to do this most necessary pretesting.

A TEACHING SYSTEM

TV, Print, and Correspondence

What came out of all this was a course in economics (called *The Standard of Living*) based on a series of thirteen twenty-minute television programmes which were broadcast in the Midlands at 12:15 on Sunday mornings with a repeat at 10:50 on Monday evenings. They began on Sunday, 27th September and ran on until Monday, 21st December, 1964; uncomfortably close to Christmas, as we found. The course was advertised by a wide distribution of leaflets, advertisements in all the newspapers in the area, screen publicity, and contact with a number of voluntary organisations. Those who enrolled paid a fee of 10s., received a copy of a specially prepared Handbook (a combination of textbook and workbook), and were assigned to a tutor in their vicinity.

The Handbook covered the material of the first ten television programmes; the last three (like the later programmes themselves) were written to meet the needs shown by the work done by students in the first half of the course. Though the chapters of the Handbook covered, week by week, the same topics as the television programmes, they contained more statistical material than could be shown on the small screen. The Handbook also listed fifteen recommended and fairly accessible economics textbooks; every three weeks students were sent the relevant page references in all fifteen so that all had some guidance to reading outside the Handbook.

At the end of each chapter was a tear-out, foolscap, exercise sheet postage prepaid for its return to a central office in Nottingham. All exercises had to be in the post by Tuesday evening. Almost all included twenty or so objective questions (true/false, multiple choice, etc.) and two or three open-ended questions requiring brief statements in reply;

only the last three exercises demanded essay-type answers. The objective questions were marked in the central office; the paper was then sent on to the tutor to whom the student was allocated who marked the open-ended questions and commented on the paper as a whole. On their way back to students, papers passed through the central office again, where they were sampled and where a week-by-week record of students' errors was kept. When the marked papers were returned to students (usually nine days after they had been sent—too long a delay), a check sheet explaining the marking of the objective questions went with them. With this the student could work through them again and could see why the answers which the office had marked √ had been judged right and why those marked X had been judged wrong.

Tutors and Tutoring

We had little idea how many students would enroll but guessed that we might need as many as fifty tutors to teach them. We wanted tutors with a degree in economics, teaching experience, and an interest in adult education; they had also to be dispersed as widely as possible throughout the Midlands. We sought them among our colleagues in the Universities of Birmingham, Keele, and Leicester and in the WEA, among local members of the Economics Association and in technical colleges and colleges of advanced technology. The response surprised us; there were 255 applicants from whom we selected the fifty who seemed to live in the right places and to have the right kind of experience and interests. In the event, we used only thirty-eight of them; our guesses about the distribution of students were not good enough, and we found that those living in the vicinity of some of these tutors were too few or too scattered to justify the setting up of separate student groups. One consequence of this was that the remaining thirty-eight tutors had rather too many students to deal with: on average about forty-three each. Tutors were paid for their correspondence teaching at the rate of 5s. per script, and for their local meetings with students 5 guineas per meeting—plus of course all travelling and other expenses.

We had two lengthy meetings with tutors: one for general briefing and discussion before the course began and one when the course had been running for a month to iron out difficulties (ambiguities in questions, inconsistencies in marking, and so on). We were anxious that they should see their task as, first, to encourage students to keep on working; second, to help them over difficulties; and third, to assess their progress

with reference to their own previous work. They formed an admirable team and did a difficult job with great skill and patience.

In addition to this postal contact, local student groups could meet their tutors on at least two occasions—one after the sixth programme and one after the tenth, both of them critical points in the course at which they were likely to be in particular need of help. In most cases these meetings were held on Friday or Saturday evenings and lasted for two hours or so. Naturally tutors were free to use them as they thought best, but in most cases they reviewed matters which the exercises had shown to be difficult and discussed questions which students raised.

Lastly, and rather as a postscript to the course, those students who could do so attended a weekend meeting at Nottingham University on 2nd and 3rd January, 1965. This was devoted partly to further group work with tutors and partly to a review of the whole project. Lord Hill of Luton (Chairman of the ITA) and Mr. J. E. Wadsworth (Economic Adviser to the Midland Bank) were the principal speakers.

PRESENTATION

A question often asked is, Why did we choose economics as the subject for our first venture in tele-teaching? There were several reasons: (1) It is an important subject, by which I mean that it is important that there should be a wider understanding of economic principles and issues in the country as a whole. This seemed to help justify the use of public money and of a costly medium of transmission for an enterprise that might fail. (2) It is a subject which lends itself to a measure of programmed instruction, since it can be broken down into fairly small sections which, as successively mastered, give students clear evidence of their progress. (3) It is a subject which is in many respects a study of changing relationships (as this grows larger, that grows smaller; as this rises slowly, that rises fast) and which is therefore apt to visual presentation. (4) It is a subject which is long established and well-developed in adult education and in which we therefore had half a century of teaching experience upon which to draw.

The television programmes were not educational show biz, not a series of distinguished lectures given by a series of distinguished dons. They were quite simple and straightforward pieces of teaching presented with great skill and patience by an extra-mural tutor of long experience, Mr. R. B. Cant of Keele University. They were sometimes criticised for slowness of pace and lack of visual interest, and indeed they might have

been better had we had the money to spare for a little more use of film and animated cartoon. But not much more; however one may judge these programmes "as television" (whatever that may mean), as part of a teaching system they were about right; though they could of course have been improved in many ways, their slowness and simplicity were, from the students' point of view, virtues not defects. The standards which are applied to television programmes as independent artifacts are not appropriate here.

We were fortunate in the producer and director assigned to these programmes by ATV, Mr. Donald Carter and Mr. Kevin Shine. They identified themselves wholly with our teaching aims and put immense skill at our disposal; Kevin Shine in particular worked with us at every stage in the preparation of the shooting scripts and took immense trouble to meet and talk with tutors and students. Perhaps this is the place to add that we found cooperation with ATV easy and effective throughout. We were after all dealing with highly controversial issues at the time of a general election. But we were left free to script and teach as our consciences dictated: nobody ever wanted to approve a script, or suggested that we should avoid this or go easy on that, or that if a managing director was given two minutes on a programme a trade union official ought to be given another two.

THE STUDENTS

The figures quoted below are of three kinds. (1) Those derived from our records of each student's work; these are shown *both as actual numbers and as percentages.* (2) Those derived from 867 questionnaires filled in after the course by individual students (excluding members of school and college groups). Those who fill in and return questionnaires are not of course representative of those who do not; on the other hand, the proportion returned was high—about 60 per cent. The questionnaire (an elaborate one) was drawn up by my colleague Walter James. Unfortunately Walter James has recently suffered a serious illness and the questionnaires await his recovery to health for a full analysis and report. For the purposes of this interim report I have used them in two ways: (a) For certain purposes I have checked through all the questionnaires; these figures are shown *as percentages only.* (b) For other purposes I have checked through a 15 per cent sample of the questionnaires; these figures are shown *as fractions only.* (3) Where comparison is made with the membership of university extra-mural classes, the extra-mural figures

are derived from a survey made in 1963 of 1,785 students in classes in the East Midlands provided by Nottingham University.

So this section lacks all statistical finesse. On the other hand, I have used only figures which seemed to be so gross that the general direction of their significance was most unlikely to be altered by a more adequate analysis. They are crude but justify I believe the conclusions which are drawn.]

Numbers and Performance

1. We do not know how many people saw the television programmes, nor is it possible to know, for the normal methods of sampling (TAM ratings, audience surveys, etc.) are too coarse to detect with any reliability numbers of this order (perhaps 30,000, perhaps 50,000).

2. We do know that 3,065 Handbooks were bought, so presumably a rather larger number than this (for some were shared) followed or intended to follow the course.

3. Some 1,656 of these also enrolled for the correspondence course, etc.; these we refer to as "enrolled students."

4. Of these, 1,347 were individuals who enrolled voluntarily and worked at home; these we refer to as "individual students"; 311 were members of school, college, and other groups who presumably enrolled and worked under compulsion. In what follows I am concerned only with the 1,347 individual students who form a group which can quite properly be compared with the adult students in extra-mural and WEA classes.

5. Of these 1,347, 228 were nonstarters; they sent in no exercises and in most cases did not reply to frequent reminders. Presumably they decided that the exercises looked too difficult—or too easy—or that they preferred to use the Handbook without committing themselves to the correspondence course.

6. Of the 1,119 who actually began the course, 549 (49 per cent) did all the twelve exercises set, 756 (68 per cent) did ten or more, and 855 (77 per cent) did eight or more. This is a remarkable record of persistence among voluntary, adult students working at home, for we must remember that there were a good many late enrolments who missed one or two exercises at the beginning of the course and that the proximity of Christmas created difficulties for some at the end. Indeed the 311 members of school and college groups, though under compulsion, did not

do quite so well: of these, 124 (40 per cent) did all twelve exercises, 200 (64 per cent) did ten or more, and 237 (76 per cent) did eight or more.

7. Almost all of them read the appropriate section of the Handbook for every programme they watched, and over half bought or borrowed books as a direct result of the course. Most spent between one or two hours a week in reading and writing their exercises, a few a good deal longer. Almost all said that they found tutors' comments on their exercises encouraging or helpful or both and that the check sheets for the objective questions enabled them to understand why they had made mistakes as well as where they had made them. Three-quarters thought that tutors' comments were sufficiently full, but a quarter would have liked longer comments.

8. About two-thirds attended the first meeting with their tutors and one-third the second. The first figure is higher than I should have expected in view of the geographical scatter of these students; the second, lower—for most who had attended said that they found the meetings useful. Perhaps it was a combination of the nearness of Christmas, bad weather, and the common cold. About a quarter attended the weekend meeting at the university: a larger number than I should have expected.

9. We offered, to those who wanted it and who had completed the course, a Certificate of Attendance. A total of 717 students (64 per cent) asked for this—mainly, it seemed, as a memento of a rather unusual effort.

Who They Were

1. Of the 1,347 individual students, 55 per cent were men and 45 per cent women; 29 per cent were housewives. Extra-mural classes tended to attract rather more women than men; probably the choice of subject (economics) caused the disparity here.

2. Their age distribution was as follows:

	TV Students		Extra-Mural Students	
Under 21	11%		5%	
21—30	18%		16%	
31—40	27%		24%	
Total 40 or under		— 56%		— 45%
41—50	26%		23%	
51—60	13%		20%	
Over 60	5%		12%	
Total 41 or older		— 44%		— 55%

Comparison is difficult; the TV figures will be affected by the choice of subject, and the Nottingham extra-mural figures may not be representative of the Midlands generally. But there are no very striking differences: the TV group is somewhat younger but it shows the same bunching of students in their thirties and forties. Nor are either strikingly different from the age structure of the adult population as a whole except for the inevitable underrepresentation of the over-sixties.

3. Their educational background, as indicated by the terminal age of full-time education, was as follows:

	TV Students		Extra-Mural Students	
Left school at age 13—15	38%		33%	
Left school at age 16	25%		21%	
Total leaving at age 16 or younger		— 63%		— 54%
Left school at age 17—19	21%		21%	
Left school at age 20 or more	16%		25%	
Total leaving at age 17 or older		— 37%		— 46%

Comparison here is even more difficult, for these Nottingham figures are in this respect not representative of the Midlands generally and certainly show a smaller proportion of the better-educated among their students than would be found elsewhere. So it looks as though the TV course was more successful than extra-mural classes generally in attracting those with minimal education or near it.

4. These students had been as zealous as most in seeking part-time education since leaving school; about two-thirds had attended part-time vocational classes and over a half part-time nonvocational classes. But most of these classes had been in practical and recreational subjects; liberal adult education was a new venture for most of these students and only about a sixth had ever attended a university extra-mural or WEA course.

5. The study of economics, too, was a new venture for most of them and less than a third had tackled the subject in any way before. Why did they do it? Half said that they had no vocational purpose at all in mind when they enrolled; a third said that they joined partly because they thought that knowing a bit about economics might be of use to them in their career; only a sixth gave this as their main reason for enrolling. Again this is probably very similar to the pattern of motivation in extra-mural classes.

COSTS

The bill for this whole operation worked out approximately as follows:

1. Tutoring	—fees	£3,600	—	£ 4,200
	—expenses	600		
2. Office	—wages	£1,300		
	—postage	1,100	—	2,850
	—stationery, etc.	450		
3. Printing of Handbooks, etc.			—	1,400
4. Advertising	—leaflets	£ 800	—	1,350
	—press, etc.	550		
5. Residential accommodation			—	500
6. Dr. Bayliss, Mr. James, and Mr. Cant were unpaid. But their time spent in preparing and presenting the course cost perhaps			—	1,500
7. TV programmes: they were quite simple 20-minute programmes. Would a fair estimate be			—	13,000
				£24,800
8. Receipts	—fees paid by students	£ 700	—	£ 1,400
	—sale of Handbooks	200		
	—fees for residential course	500		
Net cost				£23,400

So it cost £23,400 to provide 1,650 students with a thirteen-week course. This sounds a lot; but how much would it have cost if we had taught them by normal means? The costing of adult education is a difficult business, but it seems likely that the *per class meeting* of ordinary university extra-mural classes is somewhere in the region of £16 and that the average number of members per class is about fifteen. To teach 1,650 students for thirteen weeks on this basis we should have had to establish 110 classes and conduct 1,430 class meetings: total cost £23,000 —about the same as that of our television-based course. And this was our first shot; were we putting on the course again we should certainly make some savings, and I think we could quite properly increase the fee for the course. A charge of 10s. was after all a ridiculously small sum to charge for tuition and the Handbook and all postage costs; £1 would be juster and would, I think, have willingly been paid by almost all of our students. (A reduced charge would be made, as it was in this case, to school and college groups.)

But the really substantial saving would come from working on a larger scale. Suppose we were putting on (as we hope to do in 1966) a nationally based course and teaching five times as many students. Tutoring costs would be increased fivefold, office costs might be trebled, costs of printing and advertising and of the television programmes might be doubled; costs of preparation would remain the same, and the cost

of residential accommodation is self-balancing. So the bill for such a course might read:

Tutoring	£20,000
Office	9,000
Printing	3,000
Advertising	2,500
Residential accommodation	2,500
TV programmes	26,000
	£63,000

Our 8,000 students would pay, say, £7,000 in fees (allowing for a reduction for school and college groups) and £2,500 for residential courses; extra sales of Handbooks would bring the total receipts up to £10,000 and the net cost down to £53,000.

For £53,000 we should now be teaching 8,000 students. Using the same basis of calculation as before, this would be the equivalent of nearly 7,000 class meetings which, if provided by normal means, would cost something like £112,000. On this scale, therefore, a television-based course would halve normal costs. It really is time that we stopped thinking of such projects as expensive and eccentric luxuries.

SOME CONCLUSIONS

1. A television-based course can recruit and hold many hundreds of good students who would not be reached otherwise.

2. We can teach effectively through television, provided that it is built into a teaching system that involves students in active learning and brings them into contact with tutors.

3. The cost, even on the relatively small scale on which we worked, need be no greater than that of normal class teaching; if the scale were enlarged it would certainly be less.

4. We do not have to wait until we get peak times on a special educational channel; indeed peak times will have their own disadvantages. Even the marginal times at present available can be used to effect.

5. The natural field for television-based teaching is at a lower than university level, in provision of courses in basic subjects which can serve the needs both of general adult education and at the same time those of students in further education and industrial training.

6. Teaching by open-circuit television has been tried out (in various ways) in Belfast, Exeter, Southampton, Cambridge, and Nottingham,

to say nothing of the much greater amount of experience abroad. We ought not to waste time setting up more experiments to show that it works; it does. Two things are necessary now.

a. Recognition of teleteaching as a normal method of adult and further education and grant-aid by the Department of Education and Science in the normal way.

b. The setting up of a regular service of telecourses under the control of a body of educators (a "National Centre for Broadcast Education"?).

7. This is not to say that no more experimenting needs to be done; we still have to find out how teleteaching can best work. Research is particularly needed in two fields.

a. The combination of television (costly) and sound radio (cheap) for the purpose of courses for more specialised groups (e.g. technical and professional refresher courses, the training of teachers and social workers, university degree courses).

b. The use of self-marking techniques to reduce to a minimum the delay between the writing of an exercise and its correction: an extremely important consideration from an educational point of view.

8. A service of the kind proposed would not serve the educational needs of this country alone; if put in permanent and exportable form, they could be of immense value in underdeveloped countries. Our own experiment, for example, is already being studied in Kenya and Zambia.

H. Wilkins

T. J. Bayliss

THE EXPANSION OF EDUCATIONAL OPPORTUNITY IN VENEZUELA

Pedro Tomás Vásquez*

The dream of Simón Bolívar, the liberator of Venezuela and other Latin American countries, for morality and enlightenment is beginning to be realized. Educational opportunity in Venezuela is being strengthened, including the development of correspondence education programs.

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The year 1964 marked the centennial anniversary of that sublime Gettysburg address, and on that occasion, when my countrymen (I come from Venezuela) meditated once more on the spiritual heritage of Abraham Lincoln, expressed in his eternal message ". . . that the government of the people, by the people, for the people, shall not perish from the earth," they were obliged to review the drama of Venezuela's history. They had to admit, also, as I do now, that in spite of our bloody struggle for independence in the second and third decades of the nineteenth century and in spite of the great number of martyrs sacrificed in the War of Independence, Venezuela did not achieve as a reward of victory "a government of the people, by the people, and for the people." Our tyrants took good care to avoid it. For more than a century, they frustrated the dream of our liberator, Simón Bolívar, inspired by his ideas that "morality and enlightenment are the poles of a republic; morality and enlightenment are our first needs."

But his dream has begun to take on reality. In 1964, for the first time in the 134 years of the independence of my country, a president elected by the free vote of the people handed over the reins of government to his legitimate successor.

Extraordinary results were achieved in Venezuela during the period of constitutional government in the years 1959 to 1964. I wish to make special reference to the field of education.

First: More than a million and a half of my fellow countrymen—Venezuela has a population of about eight million inhabitants—were rescued from the depths of ignorance and given the basic tools of culture. The illiteracy level of 38.4 per cent in 1958 fell to less than 14 per cent in December, 1963. According to our present plans that are already being executed, this percentage will be shortly reduced to 6 per cent.

Second: Venezuela achieved the goal set by the Latin American countries in the Seminar on Economic Development and Education held in Santiago de Chile, of assigning 4 per cent of the national income to education.

Third: The growth of educational services at all levels is expressed in the following statistics:

1. *Kindergarten and primary education.* The number of students for the 1957–1958 academic year was 751,561. For the 1962–1963 period, it was 1,340,384. There was an increase of 78.3 per cent. The number of primary-school teachers increased from 24,914 to 38,085. There was

an increase of 53 per cent. The number of schools increased from 6,676 to 11,000. There was a growth of 65 per cent. As Dr. Roger W. Axford has stated in his article "Venezuela's War on Ignorance," "for each 100 school buildings that had been put up in the past, 149 new buildings were put up in the first three years of the constitutional government."

2. *Normal Education* (Training of Elementary-School Teachers). For the 1957–1958 school year, the number of students was 8,260. For the 1962–1963 period, it was 28,779. There was a 248.4 per cent increase. The number of teachers in this branch increased from 820 to 1,914. There was an increase of 133.4 per cent. The number of normal schools increased from 68 to 135 (98.5 per cent).

3. *Secondary Education.* The number of students rose from 55,194 to 139,387 (an increase of 152.5 per cent). The number of secondary-school teachers increased from 3,337 to 6,264 (87.7 per cent). There was a 58.3 per cent increase in the number of secondary schools.

4. *Technical Education.* The increases were the following:
Students—202 per cent
Teachers—148.7 per cent
Technical Schools—110.9 per cent

5. *Universities.* The following were the increases:
Students—210 per cent
Professors—139.4 per cent

6. *Teachers Colleges* (Training of Secondary-School Teachers). The number of students increased by 673 per cent, and the number of teachers, by 211.6 per cent.

Well then, to consolidate those achievements and to expand educational service vigorously in all its manifestations—teaching of the ABC's, elementary education, secondary education, university education, giving of educational attention to high school and university graduates, in-service training for teachers and workers, etc.—Venezuela has had to admit, just as did countries like Australia, Canada, France, and the United States a few years ago, that for a society characterized by permanent changes and various kinds of limitations, their programs of formal education are ineffectual. As a consequence, Venezuela has had to take recourse to the system of informal instruction. I should mention that my country has carried out combined programs of correspondence courses and summer sessions by which the Institute for the Improvement of Teaching has given in-service training to thousands of elementary-school

teachers. In like manner, it has made use of radio and television to carry out diverse courses on the elementary- and secondary-education levels. And it prepares itself to accomplish vast programs for the education of adults by using the system of informal education.

Because of such circumstances, we have confronted, are confronting, and shall continue to confront the fact—as expressed by Renée Erdos—that "Both a problem and a challenge in education today is to learn how to make the most effective use of all the media of communication which modern technology has given us." And as she herself states, "The printed book, the rising rate of literacy throughout the world, the audio-visual media give us today a great variety of instruments and methods of teaching and call upon us to learn how to meet different learning situations with the most effective method, or combination of methods, of teaching."[1]

These circumstances explain Venezuela's interest in the effective task of the National University Extension Association of the United States, in the extension programs offered by accredited American universities, and in the plans for informal instruction that various countries offer.

[1] Renée Erdos, "Some Aspects of Teaching by Correspondence in Australia," in Charles A. Wedemeyer, ed., *The Brandenburg Memorial Essays on Correspondence Instruction—I* (The University of Wisconsin, University Extention, 1963), p. 77.

NEW DEVELOPMENTS IN THE PRODUCTION OF SWEDISH CORRESPONDENCE COURSES

Börje Holmberg*

Changes in the student body require changes in the correspondence courses. The use of diagnostic tests, the reduction in amount of writing demanded from the student, and the development of test questions which stimulate further thinking and further search for relevent facts are three of the new developments described here.

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The adjective *new* is entirely relative. All ideas, methods, and concepts are new in relation to others. For that reason, I feel I have to give a short account of the background in relation to which present developments in Swedish correspondence education can be regarded as new.

BACKGROUND

From 1898, when Hermods was founded as the first Swedish correspondence school, up to the 1950's, correspondence education was largely the method open to and used by gifted and energetic men and women who could not receive a proper schooling in any other way. They chose correspondence education for the simple reason that they had practically no other choice, either because they could not afford to spend time at an ordinary school or because for family or health reasons they could not attend oral classes. Of course, we still have these groups—often outstanding students, eager to learn and efficient in their work—but they form a smaller portion of our student body than they used to.

CHANGES IN STUDENT BODY

New groups of students are (1) those who already have a good general education and are professionally established, such as responsible employees in business or administration who study subjects like automatic data processing, distribution economy, or complicated accountancy or who in this way keep in touch with the latest development in their fields, (2) more-or-less bright schoolboys and schoolgirls who take correspondence courses not because they are interested in them but because they have to do so as part of the school curriculum or as a means of improving their standard, and (3) apprentices and manual workers who are instructed by their employers to study in this way.

METHODOLOGICAL IMPLICATIONS

For all these new groups, it is felt to be absolutely essential that their studies should not be more time-consuming than necessary. None of them are prepared to spend time and work on things that they do not realize the importance of; nor are they willing to follow an unnecessarily complicated path. They are much more aware of what their studies cost them in time and energy than earlier generations of students were.

These attitudes have caused us to pay particular attention to certain things in our teaching methods, and I don't hesitate to say they have helped us to improve our methods. At the same time that we are considering the demands for immediate effectiveness of the new groups of students, we feel it to be our duty as an educational institution to educate and not merely train our students. Of course we are expected (and also do our best) to do both. These two aims have not counteracted each other; in fact, the tendency to improve efficiency in the teaching of facts and skills has proved favorable to purely educational purposes. What I have in mind when I talk about *purely educational purposes* are things like the technique of study, the methods of finding and utilizing various sources of knowledge, critical reading, and independent judgment.

TRENDS IN PRESENT COURSE PRODUCTION

1. In the interest of effectiveness, it is essential that both the correspondence school and the student himself realize what the student's standard is and where his difficulties lie. This is the starting point for measures taken to help him. Correspondence educators traditionally work with exercises of both a self-check and a test character for this purpose. I am afraid we must confess, however, that it is not too difficult anywhere in the world to find questions, exercises and tests in correspondence courses that have evidently been created more as a matter of routine than as a result of a close study of what is actually required from a diagnostic point of view. Probably we have normally been a little more successful in meeting another essential demand—namely, providing questions, exercises, and tests that stimulate further study and are likely to create intellectual inquisitiveness.

Under the influence of the demands raised by our work within the official school system, the teaching staff of Hermods has become increasingly aware of the importance of introducing well tried-out *diagnostic tests,* to which batteries of special instruction sheets belong. (In a couple of courses, we have two diagnostic tests per lesson unit of 16–36 pages.) When a student shows in a diagnostic test that there is something he has not grasped or something he needs more practice in, then he can immediately be referred to the instruction sheet that deals with his particular difficulty. This favors, for evident reasons, the student's motivation much more than a reference to what he has already studied (though with unsatisfactory results). An example is shown in Illustration 1, pages 58–59.

2. Our awareness that it is extremely important to many students that the study be as practical and as little time-consuming as possible has made us *restrict the amount of writing demanded* from the student.

a. We do not expect students to copy passages, repeat questions put to them, or write full essays when a plan of the exposition to be given and then answers to a couple of specific questions are of equal value. This does not mean, however, that we are overenthusiastic in accepting objective-test methods. Such tests are useful and should be used in their proper places, above all as self-check exercises, but not when a student is supposed to practice the actual expression of ideas and judgments.

b. Sometimes in elementary courses—e.g. foreign languages, Swedish orthography, and similar subjects—it has proved useful to make each study unit (*letter* as we call them because they are used in correspondence) a kind of exercise book in which the students fill in gaps, solve problems, answer self-check questions, etc. As an example I refer my readers to an English course for grade 8 of the comprehensive school, *Engelska för högstadiet* II, unit 10 (Illustration 2).

c. Further, prepared assignment forms are useful in courses teaching skills (like languages) and have been appreciated by both students and tutors. See Illustration 3.

3. Today neither students nor teachers have any patience with *test questions,* the answers of which can be more or less verbatim copied from the course. Such questions may be in order as self-check tests but not for work to be sent to the correspondence school for correction and comment. Test questions *must stimulate further thinking and further search for relevant facts.*

4. *Illustrations* play an increasingly important part in modern teaching. There may be some sense in occasionally introducing pictures just for typographical reasons—i.e. because they make a page attractive to look at—but on the whole I consider such illustrations uninteresting and unimportant. What we are learning more and more about is the art of teaching by illustrations. As an example I wish to refer you to pp. 20–21 in unit 6 of *Praktisk matematik i samhälle, handel, teknik,* an elementary mathematics course (Illustration 4). The pictures showing a round loaf of bread being carved illustrate the difference between a circle and an ellipse. On pp. 22–23 the students are taught how to divide an angle into two equal parts. This is not done by a single drawing plus a theoretical description but by five consecutive drawings, each provided with a direction to the student telling him what exactly he must do (Illustration 5).

DIAGNOSTISKT PROV 76 B

Används när eleven läst hela brev 6

GLÖM INTE ATT FYLLA I SVAREN I SVARSRUTORNA I DEN HÖGRA MARGINALEN.

SVAR

1 Lös följande ekvationer genom "huvudräkning".

$x \cdot 6 = 18$ $x =$ ☐

$6 \cdot y = 42$ $y =$ ☐

$9 \cdot a = 81$ $a =$ ☐

2 Lös följande ekvationer genom att dividera båda leden med lämpliga tal.

$5 \cdot x = 22$ $x =$ ☐

$y \cdot 6,4 = 73,6$ $y =$ ☐

$z \cdot 10,1 = 131,3$ $z =$ ☐

3 Lös följande ekvationer genom att först omvandla egentligt bråk till decimaltal.

$\frac{7 \cdot x}{10} = 63$ $x =$ ☐

$\frac{9 \cdot p}{50} = 3,6$ $p =$ ☐

$\frac{3 \cdot n}{4} = 13,5$ $n =$ ☐

4 Lös följande ekvationer genom multiplikation och division med lämpliga tal.

$\frac{3 \cdot x}{7} = 6$ $x =$ ☐

$\frac{x \cdot 6}{11} = 21$ $x =$ ☐

$\frac{4 \cdot y}{9} = 1,6$ $y =$ ☐

FORTS.

Ekvationer, som löses genom division, sedan man först omvandlat ett allmänt bråk till decimaltal HERMODS

I brev 2 har du fått lära dig, hur man kan omvandla vissa allmänna bråk till exakta decimaltal. Så är t ex $\frac{2}{5} = 0,4$, $\frac{9}{4} = 2,25$, $\frac{7}{20} = 0,35$ och $\frac{3}{25} = 0,12$.

Detta kan du använda dig av, när du ska lösa ekvationer av en viss typ, nämligen sådana ekvationer, där det obekanta talet förekommer som faktor tillsammans med ett allmänt bråk av ovannämnda slag.

I ekvationen $\frac{7 \cdot y}{50} = 56$ kan vänstra ledet också skrivas $\frac{7}{50} \cdot y$ och alltså betraktas som en produkt mellan faktorn $\frac{7}{50}$ och faktorn y. Bråket $\frac{7}{50}$ kan skrivas som decimaltal och blir då 0,14.

Ekvationen får då detta utseende: $0,14 \cdot y = 56$.

Denna ekvation löses nu genom division på detta sätt:

$$\frac{\overset{1}{\cancel{0,14} \cdot y}}{\underset{1}{\cancel{0,14}}} = \frac{56}{0,14} = 400$$

Svar: y = 400

Ytterligare exempel:

$$\frac{9 \cdot x}{20} = 72; \quad 0,45 \cdot x = 72; \quad \frac{\overset{1}{\cancel{0,45} \cdot x}}{\underset{1}{\cancel{0,45}}} = \frac{72}{0,45} = 160$$

Svar: x = 160

$$\frac{7 \cdot b}{4} = 630; \quad 1,75 \cdot b = 630; \quad \frac{\overset{1}{\cancel{1,75} \cdot b}}{\underset{1}{\cancel{1,75}}} = \frac{630}{1,75} = 360$$

Svar: b = 360

FORTS

76 B:3

Illustration 1. Example of a diagnostic test (page 58) and of an instruction sheet (above). The extract from the instruction sheet contains the beginning of the explanation of item 3 of the diagnostic test.

Dog and Duck, an old inn in Suffolk [sʌ'fək]

F **What words in the text on the pages 7 and 8 stand for:**

1 to walk without haste .....

2 a tube for carrying away smoke .....

3 a deep hole in the earth from which coal or some other useful product is obtained .....

4 a building where goods are made .....

.....

3 They stayed the first night at an inn in a small village. The landlord showed them their rooms while the landlady got busy preparing a good meal for them.

The rooms in the inn were spacious, the furniture clumsy and solid, the wallpaper was dark, the boards in the floor were two feet wide, the stairs were steep, the beams in the ceiling were impressive. The sash windows let in the cold night air. There was a huge fireplace in the dining-room. On the mantelpiece there was a clock and a few photos.

The Swedes were enthusiastic.

Illustration 2. An extract from an elementary course in English. Students are asked to fill in the blanks under item F.

4 Here is the pronunciation of some words. What words?

[frend] ..... [tɔgz] ..... [tʌgz] .....

[stɛə] ..... [lei'bɔ] ..... [inʌ'f] .....

5 Fill in the missing words (verb forms):

Present tense	*Past tense*	*Present perfect tense*
She ..... eastwards	She *went* eastwards	She has ..... eastwards
I *feel* giddy	I ..... giddy	I have ..... giddy
We *lie* down	We ..... down	We have ..... down

6 Write about *fifty* words about a boat-trip that you have made yourself. Tell me "when, where, who and how".

.....

.....

.....

.....

.....

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.....

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.....

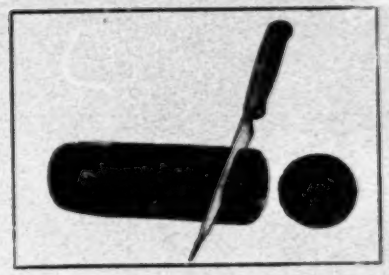
.....

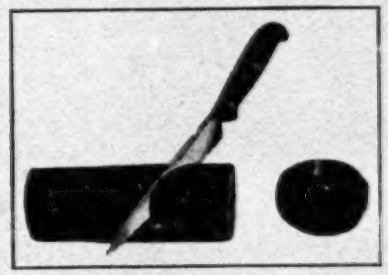
Glöm inte att fylla i ditt elevnummer, ditt namn och din adress på framsidan av papperet!

Illustration 3. An extract from a prepared assignment form belonging to an elementary course in English.

ELLIPSER

Vi ska experimentera ett ögonblick med en rundkavring. Först skär vi kavringen på "vanligt" sätt. Då blir snittytan en CIRKEL.

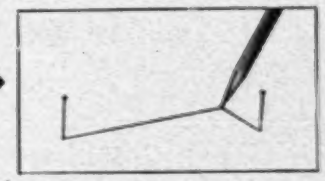




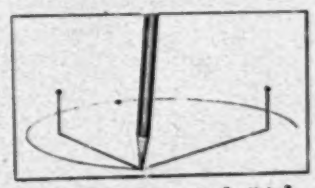
Sedan skär vi "snett". Snittytan blir i detta fall inte cirkelformad. Snittytan är en ELLIPS.

I den här kursen ska vi syssla ytterst litet med ELLIPSER, men Ni måste ändå känna till begreppet, eftersom det återkommer i den sista studieenheten i kursen. Hur ska man då definiera en ellips? Det är ganska svårt, men vi har god hjälp av följande bildsvit, som visar hur man kan konstruera en ellips med hjälp av ett snöre, en penna och två knappnålar.

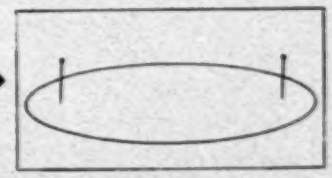
Fäst två knappnålar på ett papper. Gör fast en bit sytråd i båda knappnålarna. Observera, att snöret inte får vara sträckt.



Spänn sedan tråden med en penna som figuren visar.



För sedan pennan runt så att tråden hela tiden är sträckt.



Så här ser ellipsen ut, när den är färdigritad. De punkter, där knappnålarna har varit fästade, kallas ellipsens BRÄNNPUNKTER.

Eftersom tråden varit sträckt under hela tiden som vi har ritat ellipsen, har tydligen varje punkt på ellipsens PERIFERI den egenskapen, att summan av dess avstånd till de båda brännpunkterna hela tiden är densamma = trådens längd. En ellips kan alltså definieras så här:

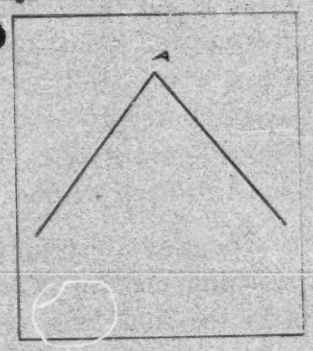
EN ELLIPS ÄR MÄNGDEN AV ALLA PUNKTER, FÖR VILKA DET GÄLLER ATT SUMMAN AV AVSTÅNDEN TILL TVÅ GIVNA PUNKTER ÄR KONSTANT.

Illustration 4. An example of the kind of illustrations in the teaching of mathematics.

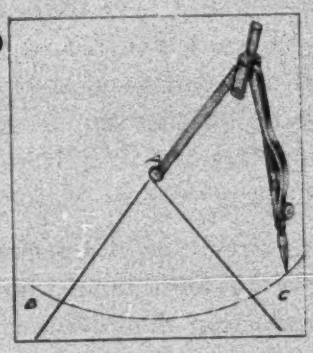
NÅGRA ENKLA GEOMETRISKA KONSTRUKTIONSUPPGIFTER

Hur man delar en vinkel i två lika stora delar

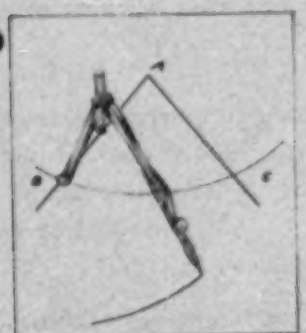
Om man ställs inför problemet att dela en given vinkel i två lika stora delar, kan man givetvis klara av det med hjälp av gradskivan. Denna metod är dock inte tillräckligt exakt vid många tillämpningsuppgifter. Det finns en exakt metod, som vi redogör för här nedan.



Den spetsiga vinkeln vid A ska delas i två lika stora delar.

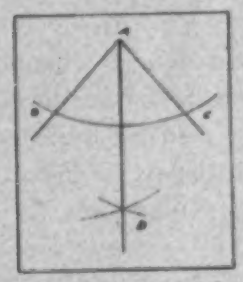


Sätt passarspetsen i A och slå en cirkelbåge, som skär de båda vinkelbenen. Vi kallar skärningspunkterna för B och C.



Sätt sedan passarspetsen i B och slå en båge med godtycklig radie, som dock inte får vara alltför liten.

Behåll måttet i passaren och flytta passarspetsen till punkten C. Slå en cirkelbåge med lika stor radie som i bild 3. Om de båda bågarna inte skulle skära varandra, har Ni valt en alltför liten radie i cirkelbågarna.



Skärningspunkten mellan cirkelbågarna kallas D. Sammanbindningslinjen mellan A och D delar den spetsiga vinkeln vid A mitt itu.

Den metod, som vi har beskrivit i denna bildserie, kan Ni också använda, när Ni ska dela en vinkel i 4 lika stora delar. Dela då först vinkeln i två lika delar. Fortsätt sedan konstruktionen och dela var och en av dessa vinklar i två lika delar. På så sätt uppkommer fyra lika stora vinklar. Att dela en vinkel i tre lika stora delar med hjälp av passare och linjal är dock omöjligt. Med gradskiva kan man emellertid "praktiskt" utföra konstruktionen.

Illustration 5. A series of drawings showing how an angle is divided into two equal parts (from an elementary course in mathematics).

Today tables, diagrams and figures are used everywhere to a greater extent than before. This has induced us to try systematically to train students in the art of interpreting and themselves using such auxiliaries.

5. Publishers and advertisers have made us all increasingly aware of the value of good *typography,* fine illustrations, and attractive production. A lot of attention must be given to the readability and attractiveness of courses. According to recent research reports, the ideal length of lines in a text is 20–22 cicero (in two-columned pages, 14 cicero per line). We are getting increasingly anxious to keep to that size.

I wish to stress that the demand for typographically pleasing courses must always be subordinated to the teaching method. The layout and general production should above all make the study easy and attractive. The financial aspect cannot be neglected, unfortunately. In Hermods we resort to offset printing of typed prototypes if the editions are small. Letterpress printing is normally used only for editions of at least 2,000 copies.

6. *Audio-visual aids* can offer valuable support in correspondence education. In spite of the advanced results achieved through modern technological developments (two-way TV, the so-called Educasting system, etc.) only very modest use has been made of AV aids, mainly for reasons of cost Sometimes they are absolutely necessary, however.

Records do not seem to be enough in language teaching; tape recordings are better suited to give students the opportunity of comparing their own pronunciation with that of the recorded native model voice. They also make it possible to have students' recordings orally commented on by the teacher. This is how a Hermods course in the pronunciation of British English, "How to Pronounce," works. It encompasses written instruction material plus two tapes with model recordings and one tape for the students' efforts which is sent between the student and Hermods, where a phonetically trained Englishman listens to the students' recordings and himself records his corrections and comments. See Illustration 6.

7. *Programmed instruction* has been studied, and experiments in it have been made in Hermods as in many other schools. We have found this type of teaching to be of limited but considerable use. Most students find it boring to study very long programs. As these direct the students in a very detailed way, we do not think their educational value is always up to the standards required; they do not normally develop pupils' independence and capacity to work on their own, but they do teach

Illustration 6. A Hermods course in English pronunciation with written and oral instruction.

efficiently. For this reason we experiment with programs inserted in ordinary correspondence courses as auxiliary measures helping students to grasp and learn complicated things. This has proved valuable in mathematics. We have also used such programs as instruction sheets (cf. 1 above) which are sent to students who have not succeeded in correctly solving a problem or completing an assignment.

8. Everybody is now aware that it is not enough to teach the actual learning matter. Students' *independence and critical judgment* must be trained. For that reason, we are trying more and more to stimulate our students to trace information in books of various kinds, in periodicals, recordings, etc. and sometimes ourselves provide not only a correspondence course but along with it a "parcel" of further reading material (articles, extracts from recent papers, etc.). It is our endeavor to make our students compare the different sources. From a practical point of view the only way of making them do this is by asking questions, the answering of which requires parallel reading and stimulates doubts and inquisitiveness. I cannot say we have gotten sufficiently far on this point, however.

These are just a few of the attempts made to improve our production methods. The tendencies developing in connection with a wider use of self-instructional materials in schools will, I hope, favor further experiments, the results of which will enable us to produce better and better courses.

NEW HORIZONS IN CORRESPONDENCE EDUCATION

Philip Lambert, Eldo C. Koenig, and William O. Vebber*

The computer has brought a new and radically different element into every organizational structure where it has been applied. By augmenting human teaching and communication abilities in its own unique manner, the computer may well bring a new horizon in correspondence learning.

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Correspondence learning, since its inception, has resided within the realm of the written English word. During the same period, we have seen a remarkable proliferation of various communication media, with many applications of these media to the field of education. The perfection of the digital computer has induced another significantly different set of changes in the education process both in theory and in practice. Combining the student and the computer into a system creates a great potential for improving the effectiveness and efficiency of the educational process. Since individual tutorial instruction is the basic premise of both a student-computer system and conventional correspondence learning, it is probable that a fusion of these two realms of instructional procedure could produce a mutually enriching interplay of ideas. This marriage of ideas is the major subject of this paper.

Present-day computer technology rests on a broad base of industrial and theoretical development. It is not possible within the scope of this paper to discuss in detail the various steps which have enabled the digital computer and its concomitant notions of information processing to envelop so much of our world in so short a time. Far from being just a high-speed desk calculator, the computer has brought a new and radically different element into every organizational structure where it has been applied. This element involves the interaction of man and machine in a dynamic ever-changing environment. While in the past, the idea of interpersonal relationships has dominated the thinking of those in the education field, now the man and the computer must be analyzed.

This man-machine confrontation can and has been transformed into an educationally productive dialogue in current student-computer systems. This dialogue uses not only the written word but all the human sensory mechanisms: sight with computer-produced displays, sound with computer-controlled audio devices, and even the illusive qualities of taste and smell associated with many information sources. Future technological developments will also permit the integration of experimentally oriented tasks into the computer-directed and monitored lesson. Conceivably, this integration could be implemented by a combination of audio-visual aids with specially constructed experimental equipment. Equipment would be designed, not for classroom or group experimentation in teacher-supervised laboratories but for individual, computer-monitored use as part of a larger man-machine educational experience.

There is and will continue to be a drastic reduction in the size and cost of the basic computer hardware, along with the increasing sophistication of current computers with multiple input-output stations oper-

ating on a time-sharing basis. Where ten years ago, a single, rather modest (by present standards) digital computer would occupy an entire room and require enough air conditioning and electric power to service a small building, today such a computer would occupy a desk top and consume no more energy than a television receiver. While the processes of miniaturization have their inherent bounds, remarkable decreases in size are still possible, and the functionally powerful digital computer in suitcase dimensions is now available.

By extensive use of automatic mass production methods, the cost of individual computer components as well as the unit cost of entire computing systems has in general decreased for a given degree of system complexity. Originally, only the largest organizations could install and operate a digital computer, since only they could bear the enormous direct and indirect costs involved. As developments brought the cost and size of units down, the computer began to make its appearance in the smaller, modest size business or commercial organization. If one anticipates the outcome of this evolutionary trend, computers may diffuse out of the business world into the individual home itself. This development would enable the computer to enter into the daily operation and control functions of the household by performing scheduling, accounting, and control operations. Individual digital computers of the type envisioned could also serve as a powerful medium of educational potential provided that the necessary programmed instructional materials are made readily available. The correspondence school would seem to be the most natural channel not only for disseminating these computer-based learning techniques but also for supervising and evaluating the student-computer system.

There are problems involved in the evaluation and supervision of correspondence students, but there is also a considerable body of experience in the area of educational data processing for conventional type schools. Research in this application area is under way at several institutions. By introducing similar techniques into the correspondence school, tremendous quantities of routine work might be lifted from the staff members, freeing them for more creative functions.

This introduction of information processing equipment into what is now largely a field dominated by written communication between people could be a source for alarm, especially because of "dehumanizing" implications. It is to be hoped that the techniques of the computer sciences, when applied with insight and intelligence, will lead to the time when man is freed from the tedium and burden of routine endeavor and allowed to exercise his creative functions more freely. The same ideal-

istic principles must also apply in the realm of education. By allowing the tasks of record-keeping and data processing to be done in an integrated computer-oriented system, the school staff could be freed to engage in a more meaningful and creative teacher-student dialogue. The computer cannot and will not preempt those aspects of correspondence learning best served by written communication between the student and the teacher. However, this communication could be made more meaningful in a creative sense, if routine questions and answers could be in some fashion processed by the techniques of a student-computer system.

A correspondence school of the future might have the following structure: the centralized staff, aided by a system of information processing computers, would be engaged in a broad, multimedia educational program with numerous isolated students. The students would have at their disposal the small individual computers outlined above. Included in this system would be audio-visual devices operating under computer control and utilizing educational techniques beyond those of the written word. On a schedule determined by the individual student's progress, the correspondence school would supply additional programming material to the student-computer system wherever it might be located. In cases where the student is not personally able to supply the necessary equipment—and, realistically, this might include the vast majority of potential correspondence students—the required hardware would be made available for rental through the school or located at the local library for general use on a scheduled basis. To preserve the acknowledged advantages of the correspondence technique in providing the student with educational opportunity at his own convenience, an individual computer of compact size at the disposal of each student would represent the ideal situation. The student could then arrange a period of instruction using the computer at any available time of day. At the conclusion of any given unit of instruction or at the request of the school, the student would return, to the supervising faculty, a computer-generated record of progress. This record would ideally be of a form which could then be processed by the central data processing facility which would maintain a complete master record of each student. Within such a system, the student would still be completely free to correspond by letter or by other means of personal communication with the faculty. Since many aspects of the educational process seem unsuited to computer implementation (specifically those areas where some form of student-to-teacher dialogue is psychologically desirable), it is very unlikely that here, or anywhere else, a meaningful educational system could result without the human element to guide and counsel.

Many technical questions arise when the details of a computer-based correspondence learning system are considered. The idealized structure pictured above might prove to be unrealizeable in practice, although it seems to require no totally new technological breakthroughs but rather only an extrapolation on a modest level of the present state of the art.

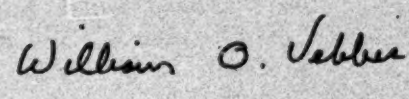
As an alternative to the concept of computer-based correspondence education in which students at remote locations are provided with individual compact computing hardware and then supplied with programmed material by mail, a system of remote terminals linked by some form of communication system to a large-scale centralized computer is possible. Such a system would require a direct connection to the central computer at all times during its operation, since the student would have only the input, output, and display equipment at the remote location. The requirement of a connection to some central processing facility could be satisfied by use of either wire (i.e. telephone circuits) or radio communication. With wire circuits, the student would "dial" a number with conventional telephone equipment and be "connected" with the central computer processor. At the end of the learning session, the student would merely "hang up," and the teaching equipment at the terminals would be automatically disconnected. There is no reason why such a system could not include two-way communication between the student and professor, including the possibility of recording the questions of the student for later use by the faculty member conducting the course.

The use of radio communication would involve some serious difficulties when two-way transmission is considered. Radio channels could be most effectively used only for transmission of information to remote terminals and display units. Some work has already been done in this area with correspondence learning, including televised material. The responses of individual students in such a system would still be made in writing. Since the use of radio or television transmission by its very nature precludes the possibility of individually scheduled teaching sessions and must instead serve a mass audience, the student is not free to learn at his convenience as in some of the other systems proposed.

The purpose of all of the systems described above is the presentation of course material to the student and the analysis of responses by the information processing system at some location remote to the teaching staff. Many of the tutorial functions of the instructor would be assigned to the computer at the student-computer system, and the student would interact on a firsthand basis with the computer—or more accurately, with the teaching program. No attempt has been made to remove the human

element completely (i.e. the supervising instructor). The instructor in the student-computer systems would remain an important element, especially in those areas of instructional procedure inaccessible to programmed techniques. A certain enrichment of the process of correspondence learning might then take place. Students would have at their disposal a tutor whose response would in most cases be virtually instantaneous, thus avoiding the problem of delayed communication by conventional means. The remote computer-based correspondence student could request numerous recapitulations of the text or course material without time-consuming interchanges through the mail. The use of computer-coordinated audio-visual devices would add "degrees of freedom" to the educational experience by utilizing additional areas of sensory perception of the student. Experimental activities involving the use of concepts of "doing" and "observing" could form an important device not currently present in correspondence learning.

Student-computer learning systems are in an elementary stage of development and need basic research and investigation. The lack of experience with various techniques and the present emphasis on technological or "device" concepts rather than on proven pedagogical methodology has to some degree alienated those who might otherwise find this new approach to individual instruction a fruitful one. Those who would contribute to the advancement of the design outlined in this paper must have a broad understanding and appreciation of the requirements and purposes of learning and must have technical knowledge in a number of fields. The education of students at remote and isolated locations will continue to require a degree of perception on the part of the school staff which no computer will ever approximate. However, by augmenting human teaching and communication abilities in its own unique manner, the computer may well bring a new horizon in correspondence learning.



THE SEARCH FOR PURPOSE IN CORRESPONDENCE EDUCATION

Ripley S. Sims*

One of the persistent problems of correspondence education relates to the character of its being. What should be the nature of the correspondence courses? What purpose should they serve? Should they have a consistency and continuity of their own? What character should they give to the institution which offers them?

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With the ever-increasing population of human beings and with increasing emphasis on the need to provide each human being with the means for the good life, the importance of educational opportunity as an aid in social progress is recognized by all persons concerned.

Education might be achieved by many methods. Our concern here is with correspondence education and its purpose. The context of my remarks is the United States Armed Forces Institute, located at Madison, Wisconsin. But the basic questions of purpose which I raise here have relevance for all correspondence programs, civilian and military.

Each year, great numbers of young persons enter a period of military duty which may extend from six months to two years, or for an even longer period. Some of these youths enlist voluntarily and others are inducted under the compulsory military laws of their nation. They constitute a highly select group, sound in mind and body and in every respect fit to bear the arms of their nation in time of peril. In their ranks may well be the economic, social, and political, as well as military, leaders in the days to come.

Too often these youths in military uniform are viewed as inherently different from the general run of youth of the nation, even though they are the youth of the nation. Their age, educational background, years in service, educational interests, and goals are usually representative of the young people of the nation from which they come. Their civilian plans include the usual ones of getting on in life, settling down, and raising a family. The inclination in some quarters to place the students in military service into separate or unique categories, or to judge them less able academically than their civilian counterparts just because they are in uniform, has not been substantiated.

It is true that as a member of the Armed Forces the serviceman has grave concern about his present and future status. It is also true that this concern may materially affect his progress in educational work, and the emotional factors involved cannot be overlooked. It is not established, however, that he is any less of a human personality with individual interests, aspirations, and motivations than his civilian brother. The fact that the serviceman is in uniform is irrelevant to his being a student in the purest sense of that term. He is a human being with a desire to learn. The courses we offer must be attuned to his needs and capacities; the lessons must elicit and facilitate his learning efforts; and the tests and examinations we require must enable him to evaluate his personal achievement toward his goal. In short, the teaching-learning process must be oriented for his educational growth and development;

for the desire of the serviceman to learn reflects inner motivation toward his long-term goals and the need for satisfying personal ambitions.

It is normally conceived that the educational structure should have a series of subjects broken down into course offerings. The course offerings, according to tradition, should progress from the introductory levels to the more advanced stages. It is not uncommon to find several types of curricula in the traditional day school, and each curriculum has its sequence of courses leading to a "degree" at the college level or to a "diploma" at the high school level.

In the search for purpose in correspondence education, consideration must be given to factors other than those which relate to the presence or absence of a given subject or course in the system of education. Basically, the search involves considering the purpose of the total program of course offerings. It involves the question of continuity in the program, which in turn involves continuity in such traditional subjects as English composition, literature, mathematics, science, history, social science, and less consistently, foreign languages. These constitute the core subjects with continuity in the daytime school or college academic curricula. Each of these subjects proliferates into a plethora of courses, with organization and content arranged sequentially for difficulty at each academic level.

One of the persistent, yet unresolved, problems of correspondence education relates to the character of its being. What should be the nature of the correspondence courses? What purpose should they serve? Should they have a consistency and continuity of their own? What character, if any, should they give to the institution which offers them?

This problem of correspondence education is particularly pertinent when a correspondence school like USAFI is also a government agency without the usual academic prerogatives of recommending or granting credit for the courses it offers. Nevertheless, such an agency must provide courses in accordance with a guiding philosophy or the mission for which it is established. With such basic guidance, the character of the school is exemplified, not only by the courses it offers but in the relations of these courses to those in traditional day or residence schools. The image of the traditional school creates an expectation that the courses offered in the correspondence program should conform to a pattern easily identifiable with courses in the day school: They should be representative of courses normally available for instruction in regular schools; they should be in the usual order or sequence of residence

courses; and they should require the same high standards for the pursuit of excellence.

It is not possible for the correspondence educational program to achieve a structure of education similar to that in the residence school. Correspondence school programs necessarily emphasize self-instruction as a method of learning. The course materials are prepared to make what is to be learned as clear as possible; to arrange and present the subject progressively in small, relatively easy-to-master steps; to eliminate the repetition of error and to promote the required response; to aid growth in intellectual ability, skill, and insight; and to keep the learner conscious of his progress at all times. The self-instruction technique of the correspondence method of study in no way invalidates these basic learning principles. Learning is fundamentally an individual process and each person enters the process with techniques and levels of achievement uniquely his own. The method of correspondence study provides simultaneously an educational device for individualization in three distinct senses—student ability, variety of course offerings, and flexibility for time and place of study.

According to one writer, ". . . the trend toward a more realistic curriculum has proceeded at two levels, one focused on the general needs of all, and the other concerned with the specific needs of individuals. Assisted by very great advances in the study of individual differences in this century, the 'specific need' concepts have achieved greater popularity but have often found expression in a greater proliferation of courses. The recent movement toward 'core curricula' suggests greater concern with the 'general need' concepts. Correspondence educators have contributed at both levels. . . . In their planning of creative, realistic curricula, based upon community experiences, correspondence educators should be guided by the fact that it seems now that broad flexible courses provide for individual differences more suitably than narrow unrelated courses and that formal course writing often retains rather than eradicates educational deadwood. Essentially, the task is to build a curriculum which provides opportunities for student participation and evaluation in relation to the sequential development of student experiences. To accomplish this task, correspondence educators will require the serious cooperation of both professional and nonprofessional sections of the community."[1]

[1] Fred T. Williams, "Correspondence Instruction and Its Relationship to All-Over Curricular Planning," *Proceedings,* Second International Conference on Correspondence Education (Lincoln, University of Nebraska, 1948), pp. 173–184.

Another writer comments, "Correspondence-study teachers tend to assume that all the students who enroll for a given course have identical backgrounds, needs, and abilities. In consequence, they do not provide for the individual differences in students. Subject matter in a professional school consists in a body of facts which the student must acquire if he is to become an effective professional worker; but in the secondary school, where the emphasis is not on vocational preparation, subject matter should be a force for enriching present living. If this premise is sound, . . . we should think of subjects not as unified wholes but as aggregations of relatively small units which can be used as required. For example, the grammar syllabus in English could be written in separate units so that each student will have a course made up to fit his particular needs. It would not be difficult to prepare courses in this 'unit' manner; but to determine the needs of each student it would be necessary to make a careful educational diagnosis by means of interest questionnaires, tests of general ability, and diagnostic tests of attainment."[2]

This same writer in another article states, "Correspondence-study instruction has been criticized on the grounds that it is stereotyped and traditionalist, . . . Furthermore, (in correspondence education) little account seems to have been paid to the view of advanced educational philosophers that deferred values have meaning and use only in terms of immediate values, or to the findings of educational psychologists, that learning that has no significance or meaningful use to the learner is soon lost. But while it is clear that correspondence instruction must advance beyond the traditionalist position, it cannot go the whole way . . ., for, by its nature, it cannot create an 'activity school.' However, a balance can be kept between the two opposing points of view if correspondence teachers observe the following principles: (1) . . . relate teaching to the experiential backgrounds of their students; (2) . . . emphasize the immediate or early use of their teaching rather than its probable future use."[3]

Student ability has at least two meanings in the context of this discussion. In its first meaning, there is the matter of providing each student with course materials whereby he can pursue objectives and goals in

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[2] F. W. Hoover, "Correspondence Study Can Be Individualized," *Educational Administration and Supervision,* Vol. 32, No. 8 (Baltimore, Warwick and York, Inc., December, 1946), pp. 521–534.

[3] F. W. Hoover, "Modernizing the Philosophy of Correspondence Study Instruction," *Educational Administration and Supervision,* Vol. 32, No. 4 (Baltimore, Warwick and York, Inc., April, 1946), pp. 235–240.

accord with his educational needs and requirements. In traditional education, these course materials are provided normally with identical assignments and general instructional techniques applied to all alike. In a second and more refined meaning, student ability relates to the varying abilities both within a given student and among all students in the group. The correspondence method of instruction thus provides opportunity for each student to achieve in accordance with his own unique abilities and capacities and is concerned with the varying abilities within the student as he progresses through the materials for the course. The ideal correspondence course materials are not prepared for a single ability or capacity level but are developed for varying levels of achievement in accord with the basic needs of students.

Correspondence education does not stand alone in a vast arena of educational activity. As Leonard Stein put it in a recent letter, ". . . the most important thing about the correspondence course is this: It is an integral part of the total educational program. Basically, the correspondence course needs to be planned and written according to the basic decisions concerning curriculum, course content, selection and recruitment of students, evaluation procedures, etc. . . . To put it another way: Teaching by mail is identical in principle with any other kind of teaching and should not be separated from other forms of teaching-learning. Too often we make the mistake of letting paper-work details persuade us that we do indeed have a different kind of tiger by the tail—when in fact we don't."

The basic purpose in correspondence education is thus consonant with the purpose of all education; i.e. it is involved in the aggregate of all formal and informal experiences whereby the individual develops abilities, attitudes, and other forms of behavior to attain general and specific competencies in the world in which he lives. This broad purpose in education is best served when provision is made for a variety of interests, of kinds and levels of achievements, and of requirements for excellence.

One of the continuing, challenging requirements of the USAFI educational enterprise is the formulation and development of a program of course offerings. There is no intent whatever at USAFI to build a curriculum which leads to a high school diploma or a college degree. Nevertheless, it is required that the USAFI course offerings approximate in kind and quality similar courses normally offered by civilian institutions. On the basis of its stated mission, USAFI provides educational materials representative of those normally offered in civilian schools. This basic notion in the USAFI mission raises certain questions which are

not easily answered. What are representative courses? At what level? In what category? Within recent years there have been many changes in the educational community which affect both content and approaches in educational work. Courses which were formerly offered at the college level only are now being introduced to high school students. Senior high school courses are now made available for students at the junior high school level and even at the elementary levels.

One statement in the USAFI mission provides a somewhat paradoxical situation with reference to the kind of course offerings to be made available. If a projected course offering is not "normally" offered by civilian schools, there may be serious question on the advisability of making it available from USAFI. On the other hand, if a projected course offering is so widely available that the prospective serviceman student may obtain it whether or not it is available from USAFI, then the serious question of duplication of effort becomes a consideration. The problems posed by too much or too little availability are not easily resolved. It is probably at this point, more than at any other, that the responsible educational leaders at USAFI must come to grips with what the USAFI program of courses must be to meet the requirements of the assigned mission. At USAFI, as well as everywhere else in the educational community, the question of what courses to offer is a continuing concern.

The problem of *what* course to offer is made even more complex by the unprecedented proliferation of courses within recent years. The telescope has extended our knowledges and insights to include the far reaches of space, while, conversely, the microscope has deepened our knowledge to an understanding of such scientific terms as *maser* (and its derivative *laser*) and *deoxyribonucleic acid* (DNA). The growth of scientific knowledge embodying these telescopic and microscopic probings and findings have resulted in a proliferation of highly specialized courses and course offerings in science about which we will have more to say.

In mathematics the impact of new approaches is equally dramatic. This is becoming an old story. New approaches of a few years ago in the teaching of mathematics are rapidly becoming routine or even ordinary today. What is to be USAFI's method of handling these new ideas? Addition of new courses? Revision of present courses to incorporate new ideas? Whatever the method, whatever the approaches, the USAFI program of course offerings in mathematics, as in all other subject areas, must reflect the tremendous growth and expansion of human knowledge and understanding and the facts which result from this growth.

In the field of English, modern linguistics is making an impact on the kind and quality of courses being offered by USAFI. In the objective study of language, patterns of language structure can be more precisely identified and specified than was previously possible. Language is conceived to be not merely a formless, changing phenomenon but an interpretative system which enables a speaker to make understandable utterances and to interpret properly the utterances of other speakers. Language has precise phonetic laws, with a phonemic system, with a vocabulary, and with a syntax.

This type of a structural approach to the study of languages is having an influence even at the elementary and high school levels at USAFI. To what extent can USAFI take note of and incorporate in its courses the important advances in the study of languages? The continued acceptance of USAFI course offerings in this subject is dependent upon the answer given to this type of question.

It is in the midst of this academic ferment that the educational leaders at USAFI must select those new courses which adhere most closely to the chartered mission of USAFI. The task is formidable but not impossible. A more positive method of determining the need for course additions in a program of course offerings is a continuing challenge. The unequivocal answer to satisfy every case has not been found. Decisions on course additions at USAFI are made after careful consideration of as many pertinent factors as possible. Each new course recommended is evaluated on its own merits. The specific questions in each case are concerned with the appropriateness of the course in terms of criteria of which the following are representative:

1. The mission of the United States Armed Forces Institute. (This mission read in part: "It is the mission of USAFI to provide common services and materials by which the Army, Navy, Air Force, Marine Corps, and Coast Guard may supplement for members of their commands, educational opportunities in subjects normally taught in civilian academic institutions. . . .")
2. The trends in civilian schools and colleges for the course in question. (In accordance with the ". . . normally taught . . ." phraseology of the USAFI mission, the course being considered for adoption must give evidence of reasonable popularity in civilian schools if it is an introductory course, or of meeting specifically defined needs if it is advanced or specialized.)
3. The purpose, scope, and level of the course within the context of the USAFI mission.

4. The specific subject matter of the course within the context of the knowledge, information, and facts available in current USAFI offerings.
5. The unique contribution of the course in terms of the relationships, applications, or skills generally recognized as essential and within the scope of the USAFI mission.
6. The attitudes, ideals, interests, and tastes engendered by the course within the context of the society in which we live and of its reasonably predictable future.
7. The suitability of the course for correspondence and group methods of study.
8. The suitability of the course within the context of civilian academic and accreditation standards and practices for the subject area concerned.
9. The cost of the course and the ability of the USAFI budget to absorb the added expense.

In addition to the factors enumerated above, there are other important considerations for providing course materials to service personnel through USAFI. Expeditious service to the student is an important matter. Also, the unique availability of USAFI course offerings for group study activity is an important consideration. Whether or not an additional course offering is to be made available through the facilities of USAFI is determined in a large manner by a careful consideration of the factors enumerated in this brief statement of the problem.

There is a continuing search for a common learning in all education. What learnings are so essential that they must be required of all? Where do the interests of the individual and the common interests of all individuals meet in the educational program? What are the implications of the search for a common learning for the purpose of correspondence education? The doctrine of individual differences has been pressed during the last five decades to a point some educators consider extreme. Nevertheless, one of the most frequent criticisms of general or common education is that it makes too little allowance for individual differences. The problem of flexibility in course and curriculum structures is still a major one upon which the opinion of educators is sharply divided. But the quest for a common core of courses required of all students continues a major concern of many colleges. It must be also a concern of correspondence education.

The student cannot gain an education out of a few disconnected fragments of knowledge obtained here and there under the guise of "courses"; and some accuse correspondence education of too often contributing to this approach. How to produce a unified understanding of knowledge as a whole is the question on which there is no unanimity of thought and therefore no ready answer. One answer, of course, is that knowledge has no complete unity. Physics is related to chemistry and biology, but beyond these types of relationships there is no unity of knowledge. Each student, some would say, should explore other subjects than his own field of concentration and thereby gain "a little music, a taste of philosophy, a glimpse of history, some practice in the techniques of the laboratory, and a thrill or two in the appreciation of poetry. . . ." "This approach may be protection for the student against one-sidedness," wrote Dr. Alexander Meiklejohn, but he declared ". . . through it all there runs the quality of the devil in church on Sunday resting from the labors of a busy week."

"Education is not the raw appropriation of results, as results," he continued, "but rather the comprehension of results through their processes. The important question is not necessarily what is or was but rather how came man to greatness in linguistics or mathematics or art or science, and what do his accomplishments signify?"[4]

The correspondence education program must contribute to the basic concepts of the common learnings and goals as an integral part of the total educational effort in a democratic society. The successful educational program combines common learnings with enrichment courses so that the gifted, average, and slow learners experience greater differentiation as they progress through the program.

How frequently should courses be changed or updated? The question is a moot one: The type and purpose of the course must be defined clearly before the unequivocal answer can be given. History and the social studies may require frequent revision, whereas mathematics and science require very little revision. Or do they? The need for revision exists in all areas from time to time—but for quite different reasons, as is exemplified by two extended examples from the mathematics and science areas. First, mathematics.

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[4] Russell B. Thomas, *The Search for a Common Learning: General Education 1800–1960* (New York, McGraw-Hill Book Company, Inc., 1961).

It is fashionable today to talk about the new mathematics, but as most mathematicians emphasize, there is really little that is *new,* particularly in what is being taught today at the secondary school level. The concepts of sets, binary numbers, and group theory are at least one hundred years old. What is *new* is the emphasis being given to certain topics not previously treated in secondary mathematics. At present, there is no unanimity of thought on what topics constitute the new approach in mathematics, "but certain common patterns are beginning to emerge which can be discerned."

According to Dr. Allen F. Strehler, Associate Professor of Mathematics at the Carnegie Institute of Technology, the *new* mathematics is distinguishable by the following criteria: "It eliminates those topics that are relatively unimportant; it integrates those topics that are important developments in mathematics; it emphasizes the structure of mathematics, rather than isolated topics; and it introduces subject matter to students earlier than was thought possible." This is the *new* mathematics in essence: It is *new* in approach, *new* in emphasis, and *new* in the introduction of certain mathematical topics to secondary school students.

"Another concern in the *new* mathematics is the problem of semantics," continues Dr. Strehler. "For the high school student, algebra is probably epitomized by the quadratic equation studied in the ninth grade, whereas the mathematician denotes algebra as an extensive area of higher mathematics that is presently alive with research for *really* new results. Also, for the high school student, the term *analysis* may denote a college preparatory course in mathematics, whereas, to the college student *analysis* denotes a really high-powered course in the functions of a real variable. There is evident need to resolve a minor semantic tail-spin in a discipline which, paradoxically enough, prides itself on how precisely and unambiguously its words and concepts are defined." And, there is also evident need to revise math courses from time to time to include the new approaches in teaching.

And now for science and its changes. The heresy of the past is the orthodoxy of the present, and nowhere is this better illustrated than in the field of science. A fascinating treatise on how science came to greatness in our time is the subject of a recent book entitled *The Architecture of Matter* by Stephen Toulmin and June Goodfield. "The classical nineteenth-century science may still provide today's bread and butter of introductory courses at school," say the authors, "But at a more advanced level the hard and fast intellectual boundaries of 1875 have faded . . . while at the same time some more ancient dividing lines, which classical

physics and chemistry contrived to do without, are once again becoming visible."[5]

These brief glimpses into the changing content of mathematics and science indicate some of the kinds of influences which require fundamental revisions in these areas. How often should courses be revised? As often as is required to keep them abreast of what is taking place in a world that is changing rapidly under our very hands and eyes.

But in science, as in other fields of learning, concentration is too often too heavily weighted with the cognitive domain, almost to the complete exclusion of the affective and possibly other domains. To know, to understand, to comprehend, to apply, to evaluate—these are the criterial bases for much academic instruction, both classroom and correspondence. And important criteria they are, since our industrial society and mode of life require extremely high skill in a wide variety of subject areas. But a complete education is both intellectual and emotional, and insights are being gained which will aid in setting objectives outside, as well as within, the cognitive domain.[6]

The individual student has interests, appreciations, and attitudes. He becomes aware, he receives, he responds, he rejects, he acquiesces, he values, he commits himself to a way of life, and he becomes a personality. And he does all of these things emotionally as well as intellectually. He is what he is, not only because of what he knows, or comprehends, or applies, or evaluates but also because of what he feels, or loves, or believes. His interests, appreciations, attitudes, and sense of well being need nurturing, as well as his intellectual powers, for his emotional and intellectual life are inextricably bound together. The scientist needs a sense of social responsibility for his work as well as erudition in the accomplishment of that work.

Education is more than knowledge, comprehension, or evaluation. The truly educated individual has all of these, but he has more. He has self-discipline, he has self-reliance, and independent thought. He is not bored with life, he has vision, he has self-confidence and self-esteem. These are personal and social attributes beyond the cognitive domain, and they are attributes to which correspondence study can contribute directly.

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[5] Stephen Toulmin and June Goodfield, *The Architecture of Matter* (New York, Harper and Row, Publishers, 1962).

[6] David R. Krathwohl, Benjamin S. Bloom, and Bertram B. Masia, *A Taxonomy of Educational Objectives: Handbook II: The Affective Domain* (New York, David McKay, 1964).

And there are other values as well. Values of the integrity and dignity of the individual; values of the freedom of thought and of discourse; and values of the sanctity and safety of the home. For over the long haul, "The kind of scholar any man is to become, so far as the abiding value of his influence goes, is determined not so much by what he knows and says as by what he believes and loves."[7] The fundamental goal of all education is the realization of the highest potential of which each learner is capable in both the cognitive and affective domains, and correspondence education attains its ultimate purpose as an integral part of the total educational effort for the achievement of that fundamental goal.

PRECEPT AND PRACTICE

The image of an educational institution is not a static or unchanging thing. Like the social, political, economic, scientific, and cultural environments in which it is founded, the educational institution shifts and changes with changing times. This is as true of USAFI and its program of course offerings as it is of any other institution. Through its program of courses, tests, and record-keeping services, USAFI creates and sustains an impression of itself both in the minds of the persons serviced and in the minds of people interested in USAFI's work. This image changes with changing times, and in many aspects our times are changing more rapidly than at any other period during the lifetime of persons now living.

What are the practices of correspondence education? In a master's thesis involving fourteen home study centers and ninety course guides, John L. Sprott of the State University of Iowa in 1958 set about to identify and compare some of the actual practices in correspondence study with the most desirable practices as expressed by twenty-three professional people engaged in high-level correspondence instruction.

Some 95.7 per cent of the jurors agreed that a special effort should be made to welcome the student to his work in correspondence education. However, only 28.9 per cent of the guides contained any special feature of this type. All of the jurors agreed that students should be invited to comment on any phase of the work which they did not understand, and about 73 per cent of the guides invited questions from students and 69 per cent told the students where to send their questions.

[7] Quotation by Andrew Fleming West.

Definite statements on the objectives of the course were thought to be essential by 95.7 per cent of the twenty-three jurors. However, only 78 per cent of the course guides examined actually contained statements on the aims and purposes of the course. While 91 per cent of the jurors favored including recommendations for study in the guides, surprisingly fully 96.5 per cent of the guides actually contained suggestions to the student on how to study.

All jurors considered it good practice to include the author's name in the syllabus, but only 71 per cent of the guides did so.

With regard to assignments, 91 per cent of the jurors agreed that every assignment in the guide should follow the same sequence or order; and 100 per cent of the guides were found to do so. The usual order is to list the text assignment first, give the instructor's or author's comments second, and make the written assignment the last item in the sequence. The instructor's or author's comments are sometimes called study notes. Such notes or comments ranged from one sentence to a ten- or twelve-page presentation. Eighty-four per cent of the judges favored greater use of study notes in the guides.

Seventy-four per cent of the jurors favored inclusion in the guides of review-type lessons, and 25 per cent of the guides actually contained such lessons, with the most frequent of these in mathematics. Some 58.8 per cent of the guides contained supplementary reading lists with the least of such supplementary material in the mathematics courses.

Fifty-six per cent of the jurors thought that practice exercises should be included in the guides, but only 16 per cent of all syllabi included such exercises. The jury was evenly split on whether the written exercises should cover all reading materials.

There were no courses which included exercises or projects the student could do if he wished to earn extra credit; and only 4 per cent of the jurors thought that such exercises should be included. Furthermore, optional assignments were included in only 4 per cent of the guides, although 43 per cent of the jurors agreed that such assignments should be included.

With regard to examinations, there was unanimity of agreement between precept and practice on the requirement that students should take a supervised final examination at the completion of the course. None of the jurors favored giving partial credit to those students not taking the final examination, and no course gave such credit.

In 93.7 per cent of the courses, the student's final grade was based upon both supervised and unsupervised activities. In the other 6.3 per cent, grades were based entirely on the results of supervised examinations, or entirely on unsupervised examinations.

It is suggested that the search for purpose in correspondence education will help in determining the practices and procedures that will characterize this activity. Let us ask ourselves, Are we who have responsibility for correspondence education, whether civilian or military in sponsorship, properly and effectively carrying out the purposes of education?

Ripley S. Linn

WORDS WITHOUT GESTURES

George Hartung*

A relative newcomer to correspondence education, Professor Hartung recorded some apparent weaknesses and advantages of this form of learning while his impressions were still sharp and fresh.

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Seldom is one called upon to speak on a subject because he is *not* an expert, and I am more than a little embarrassed that I am supposed to offer clear, intelligent comments about CS when I have been acquainted with it for less than a year. I am especially embarrassed before you, many of whom have years of experience with teaching by mail. However, even naiveté and brashness may have value at times; my mistakes and lack of perspective may offer some enlightenment in a roundabout sort of way. I have benefited from the years of experience of colleagues in the Extension English department; I hope they do not take offense at anything I have to say about shortcomings of correspondence instruction at The University of Wisconsin. I feel a strong commitment to this method of teaching, and any criticism I offer is presented with the definite aim of raising its status and quality. And if I fail in stimulating a lively discussion, at least this experience will have been valuable to me: I have learned much by trying to think about CS in an orderly and informed manner.

First I would like to speak of some reservations I have about CS. Because I taught for eight years at the Marathon County Center of the University, where the faculty has enjoyed a close relationship with the students, I find that I miss the immediacy of classroom discussion and the informal and friendly atmosphere that prevailed outside of the classroom. There students were continually dropping into one's office with questions about summer jobs and writing projects (some even not required for courses), with complaints about red tape, with expressions of dismay about "going to Madison," and so forth. I find that I miss the rapport with students that is so easily established in such an institution. There are just some things that you can't do in CS. I do not share the faith of the high school principal who wrote at the bottom of a student's application for a correspondence course: "The above student dropped from school because he refused to meet the school's standards of good grooming. He now wishes to make up his deficiencies by correspondence." Perhaps a collection of photographs of the faculty might be made available for such cases.

Frankly, I began my work in CS last year with some skepticism. I was attracted more by the quality of people I would be working with and the advantages of life in Madison than by the concept of CS. And I was curious. My previous awareness of this method of instruction was limited to the idea that it was often the last resort of a student who had

to make up a course or who found that a course he needed was unavailable at the Center during a particular semester. Thus I had the impression that the bulk of enrollees were poor students or "problems." The more concrete impression of CS was that of remoteness from the more stimulating features of University life. The former location of CS in the Home Economics building is an ineradicable memory, and my visits to the English department there suggested that CS encompassed mainly the most depressing feature of teaching English at the Center: the interminable reading of freshmen themes. Now, I do not object to teaching freshmen composition; it only is the sheer bulk of seventy to ninety themes or exams piled up on your desk that is depressing. Happily CS has turned out not to be like a perpetual six weeks exam time; there is a good deal of variety and not as much of the so-called academic drudgery as I expected, although July and August in the English department can be a trying experience.

Many others not in CS must have an impression of it similar to that which I have just sketched. This is an image that no doubt is a hindrance to us, and I'm afraid that, distorted as it is, there is much truth in it. To many students we are no more than a last resort, though the better students and those who have a real desire to learn are usually very pleasantly surprised at what they have backed into. And the impression of remoteness is to some extent justified: A university education is not merely an intellectual experience in the narrow sense of what is learned in the classroom. In the words of the "Report of the Special Committee on the transfer of credit from UW Centers, extension classes, and correspondence study" to the faculty on May 18, 1964, "residence at the University implies an educational experience transcending mere course work: the opportunity of studying with outstanding scholars, meeting students from a wide variety of social and regional backgrounds, and participating in cultural and social activities of many kinds." To this I would add only the proximity of two well-stocked libraries and political activities of a most stimulating kind.

CS might be likened to reading a play: Close study of the text may be very pleasant and enlightening, but it is not the same as *seeing* and *hearing* that play performed well. Many students may *learn* more from CS than from residence courses, but they don't experience that learning in quite as valuable a way. Correspondence courses have the content of residence courses but not the context.

There are other limitations to CS: The fact that you are here in front of me is strong evidence of one. Some of you have been inconvenienced

in coming here, perhaps even coming reluctantly. After all, my remarks could have been mimeographed and distributed to all the wastebaskets in University Extension. It seems natural and inevitable that we value the spoken word above the printed. People who rarely open a volume of poetry flock to hear famous poets read their poems, and I have no doubt that some benefit from this sort of experience. So, ironically, we in CS come together in something like a classroom.

It is a sound principle, I believe, that the more senses involved in the learning process, the more efficient the process. Of course this may be carried to absurd lengths—"No, but I saw the movie"—but it seems obvious that students with little imagination usually don't get as much out of reading—and CS—as they should. They can't fill in the gaps.

This factor, the primacy of the spoken word (with gestures), is not just theoretical; there are several very practical consequences:

1. In CS, poorly motivated students are perhaps more likely to repeat errors. In the classroom, it is difficult to ignore the instructor's indignation. It's possible, but time consuming and sometimes difficult, to raise an eyebrow on paper.
2. Enthusiasm for one's subject is, in part, physical, and an instructor's delight in a subject, even when not put directly into words, is communicated by his presence. He can *look* enthusiastic and the tone of his voice can cancel out pedagogical shortcomings. There are some woefully disorganized but delightful lecturers.
3. The spoken word can be spontaneous; it can be man thinking. Words on paper smack of calculation and revision, and one usually writes —and thinks—alone. But in a good classroom discussion (by *good* I mean informed and spontaneous) participants think together. Sometimes the teacher can sense what a student is trying to say and help him to say it. Sometimes it's the other way around.

I feel competition is important in education. In the usual classroom situation the superior student can (though he may not) learn not only that he is superior but also what that superiority entails. He may learn humility and a sense of responsibility. He may also learn that superiority takes different forms. And the student who is not superior learns what it is that he should admire or aspire to. And in doing so he may discover abilities that he and others never suspected. The value of a good race is not that there are winners and losers but that all in it run a bit faster than they otherwise would.

This sort of competition, at least the more beneficial aspects of it, is not present to a great extent in CS as I have experienced it. One student

asked plaintively, "How many students are taking this course? How am I doing in comparison with others?" She was a bit suspicious of her B's and A's. There are probably other students who are uneasy about their classmates; it's a bit like being in a race in which all the other runners are invisible.

The instructor can, to a considerable extent, make up for this lack of competition by commentary, and, of course, grades do provide some measurement and incentive. But this is not the same sort of creative experience that a student may have in a discussion in which other students are involved. To a limited number of students—the mature solitary thinkers and creators—this limitation of CS is no great hindrance. And the lack of competition may not be felt in some specialized courses. But I think it is an important factor, the lack of which should much concern us.

Another weakness of CS that I'm sure we are all aware of, and which we are taking significant steps to eliminate, is the fact that most of a student's work is done with his books open before him. This certainly has its advantages, but Mnemosyne is rightly called the mother of the muses, and when a student is not compelled to know the material *before* he begins to discuss it, either on paper or in class, little may be committed to memory. This, I have found, is not so great a problem at university level work as at the high school level, but it is still there. Often, in a final exam, the student just will not remember details that are expected of him. A perfect example of this came before me the other day in the final exam of a high school student. He wrote in answer to a question about the accomplishments of Benjamin Franklin: "We remember Ben Franklin for many things, none of which I can recall."

There is, then, often a discrepancy between the quality of work during a course and the final examination. I have, however, hopes for mid-course exams, though I doubt that, for the average or below average student, the problem will ever be completely solved.

Enough of the negative. This has been probably an unwarranted expansion of the obvious; I know of no one who has suggested CS as a completely adequate substitute for residence at a good university. All of what I have just said is not new to those of you who have been in CS longer than I have. But I think there is always the danger of forgetting even the obvious in our daily routines. Only by keeping in mind the inherent deficiencies of correspondence work, at least as it now exists, can we make the necessary efforts to supply remedies and to counteract the negative attitude of which I have spoken.

Now, however, let me turn to what I have found of value in CS. Again I am going to say much that is obvious, although I hope I can say it freshly and emphatically. My work with some students has been far more than just satisfying to me. Older students, particularly those not scrambling for credits, have demonstrated that teaching by mail has great advantages over the classroom. This is not simply a matter of individualized instruction; I've taught enough noncredit classes to be more than a little skeptical about adult education in the classroom; too many come to be seen and to be heard rather than to learn, or they expect to learn without making any effort whatsoever. I've found, particularly in writing courses, that it is difficult to get people to write when no credits are involved. But those adults who commit themselves to correspondence courses in writing usually do not expect passively to absorb information on how to write for money without making some effort.

The same principle, of course, applies in credit work; in CS the inherent factor of self-discipline is perhaps its strongest point, while at the same time it accounts to some degree for our noncompletion rate. For one thing, there is no illusion of accomplishment as there may be in the classroom. We all have known students who have deceived themselves, despite the warnings of teachers. This sort of student attends classes, but does little else. He may believe he is "absorbing" learning—even that he may, because of the instructor's soft heart or soft head, pass the course. But if he is enrolled in a correspondence course and is passive, there is absolutely no illusion.

If one of the values of education as opposed to training is to give one the ability to face things as they are, CS can do it. It is certainly uncongenial to the glib talker who has fooled others—and perhaps himself—into believing that there is more going on in his head than there really is. Illusions and false ideas usually appear much more illusory and false on paper than they do on a persuasive tongue. And this applies to lectures too; writing or revising a study guide can be a soul-searching task.

I have been convinced that there are other built-in advantages to the correspondence course. A teacher from England once said to me that he was impressed by the American student's ability to express himself persuasively "on his feet," that the average British student can't handle himself as well in the give-and-take of discussion. But he was not impressed by the average American's ability to express himself on paper. However true this may be, and I am in no position to decide, it would seem to be a result of differences in the educational systems. I'm sure

that if the use of correspondence study were far more extensive, such a comment would be decidedly inaccurate. For good, thoughtful, detailed discussion is virtually impossible in today's classrooms. Usually there are too many students, too great a variety of abilities and backgrounds. The ability to organize carefully, the persistence to follow up the consequences of an idea, the courage to be original without fear of ridicule from obtuse or unsympathetic classmates—all these can be fostered by CS. And in learning to write there is no substitute for constant practice.

I suspect that what I have just said applies also to courses other than those, like English, that require much writing. The student must read instructions carefully, he must ask questions on paper, he faces extended exposure to the idea of precision on paper. Leonard S. Stein has said, "What we in correspondence study have to offer is for the minority that wants a more deeply penetrating learning experience than is possible in discussion activities."[1] I venture to say that if the self-discipline demanded by CS is not developed by a *majority* of our students, we are going to be in pretty bad shape in the near future. And I think that this development is possible, with a little pressure, for I have seen students develop the necessary self-discipline and complete courses when I thought them hopeless at first.

Some of the apparent weaknesses of CS have, upon closer examination, turned out to be strengths. For one, the fact that the student is on his own and can easily fall into error can be an advantage. The student who misunderstands one word and goes astray on a complete assignment has had a quite profound learning experience and a strong inducement to open his dictionary more often. The student in the classroom who misuses a word *is more likely to shrug it off* rather casually.

There is also the almost inflexible study guide, bound up neatly, everything one needs to do laid out step by step. I imagine this is appalling to some students accustomed to flexible courses. But this inflexibility of the correspondence course can be illusory, and the fact that the course is canned may be very advantageous. The correspondence teacher, because he is not bound by a rigid time schedule, can write a tightly integrated course. There is no possible conflict between William Cullen Bryant and Thanksgiving, between theme number ten and an out-of-town football game. You can't lose a day. And there isn't as much danger that the

[1] Leonard S. Stein, "Liberal Education for Adults by Mail," in Charles A. Wedemeyer, ed., *The Brandenburg Memorial Essays on Correspondence Instruction—I* (The University of Wisconsin, University Extension, 1963), p. 12.

connection between the first week of a course and the last will be as tenuous as it sometimes is in residence classes.

Because students enrolled in a course are working on different assignments, the teacher may become more aware of connections among the material and of difficulties encountered by the student. To put it simply, I think there is more opportunity for the teacher and student to see the course as a whole than in the traditional semester division.

I am also convinced that in many ways the traditional school year and the lecture method of teaching are holdovers from a period when books were expensive and rare and communications were poor. The academic gown, happily seldom seen hereabouts, is not the only medieval relic in our educational system. The lecture too often is a very poor substitute for the book—or shall we say the study guide? I am not alone here: "A competent student can read in one-half to two-thirds less time what a lecturer gives orally."[2]

I suspect that we have not yet begun to approach the potential of the printed word as a teaching device. While I am to some extent in accord with those who see potential in television and recording devices, I think that they are only supplementary. In what he calls a "little science-fiction anachronism," Felix Pollak of our Memorial Library staff imagines a world in which we are completely dependent on "all the wonderful audio-visual aids science and technology have provided for us." He predicts the invention of a simple portable device that will free the individual from all the spatial and temporal limitations of the machine. The name of this wonderful invention will be simple—*Book.* It will render futile all attempts at thought control and "may . . . well be the salvation of culture from mechanized civilization, and thus rank as the most important discovery of all times."

To this may I add that *Book,* by way of CS, may also save culture from the classroom containing hundreds of compressed bodies—and depressed minds. For the large lecture room has no advantage over TV: I ask only of what value is it for the student to see the teacher when the teacher cannot see the student?

This may seem to contradict the implications of my title and what I have said about the value of confrontation in the classroom. But I want to talk about the *potential* of CS. Both the classroom and CS depend

[2] Charles A. Wedemeyer and Gayle B. Childs, *New Perspectives in University Correspondence Study* (Center for the Study of Liberal Education for Adults, 1961), p. 51.

for their effectiveness upon the teacher, and I think that CS offers more opportunity for the good teacher; he can reach *individuals* more effectively. But this is the most demanding kind of teaching. The teacher must find substitutes for gesture; he must find ways of stimulating students that will make up for the inherent weaknesses of CS. And this must be not only in his comments on lessons. Study guides should more closely approximate the quality of his spoken language than that of textbook English. By this I do not mean the casualness and carelessness of much of what is called popularization. There should be something of the unexpected—not whimsy or cuteness, but the injection of the apt and amusing (and above all brief) anecdote to illustrate a point or the personal experience or reaction of the writer. And there is no reason why a question cannot be sandwiched into an explanation in a study guide—in the same way that a teacher might toss out a question to see if the class is following an explanation. The current revisions of our study guides are in the direction of informality; I suspect we will go farther.

The expansion of teaching at a distance—without gestures—is bound to continue. Its effectiveness is undoubted. The recent action of The University of Wisconsin Letters and Science faculty permitting the transfer of correspondence credits from other universities is assurance that learning by mail is well established as an important and valuable part of American higher education. New techniques, revised attitudes, and the pressure of rising enrollments are going to change correspondence study radically.

But our object should not be merely to demonstrate that teaching by mail is an adequate substitute for teaching in the classroom; correspondence study has the potential of becoming superior. My experience of the past year has convinced me of this, but to realize this potential we are going to have to bring to our students more of the context of learning. Somehow we need to bring something of the stimulating atmosphere of the classroom to correspondence instruction. This may involve many of the new techniques, but above all, correspondence instruction demands stimulating teachers who can make their presence felt—on paper.

George W. Hartung

THE ROLE OF THE INSTRUCTOR IN CORRESPONDENCE STUDY

Margaret I. Knowles*

The study guide and the instructor play complementary roles in correspondence teaching. The demands on the correspondence teacher are heavy, but they carry rich rewards for the individual who sees education as a lifelong endeavor of study, intellectual growth, and the quickening of one's appreciation for the things of the mind and the spirit.

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If it is true, as many would claim, that teaching at its best encourages thinking and the orderly expression of thought, it becomes evident that correspondence instruction with its emphasis on reading, analysis, interpretation, and writing under the direction of study guides and competent instructors is exceptionally well fitted to do this.

Two significant factors which differentiate correspondence instruction from classroom teaching are the absence of face-to-face confrontation with students and the almost total reliance on the printed and written word. While this situation is being modified by the use of aids such as tape recordings, telephone conversations, and closed TV circuits, all of which can materially enrich the learning process, they have not, as Dr. Leonard S. Stein has pointed out, eliminated the basic need for systematic reading and writing in the development of a liberally educated person.[1]

The study guide and the instructor play complementary roles in correspondence teaching. A well-constructed and imaginative study guide will give an overall interpretation of the significance of the course, divide its subject matter into manageable units or assignments, clearly state their objectives, and indicate which books and other materials are required for the student's use. There may be study aids in the form of self-tests, suggestions for review, and possibly information concerning examinations, but it is the student's written work sent to the instructor for comments and grading that will make the most rigorous demands on the student's thinking, provided that the problems, questions, and topics have been designed by the writer of the study guide to compel the student to engage his mind in disciplined and reflective thinking. This is probably the most difficult part of the work involved in the preparation of a study guide for use in correspondence study.

The chief responsibility of the instructor consists of making careful evaluations of the student's written work, challenging his interest, encouraging and counseling him, and sharing with him some of the instructor's own wisdom and enthusiasm for study and learning. This he will attempt to do through written comments which he places on each assignment that is sent in for evaluation and grading. These comments constitute the most important single aspect of the instructor's work in handling individual assignments. They will vary with different types of courses

[1] "Liberal Education for Adults by Mail," in Charles A. Wedemeyer, ed., *The Brandenburg Memorial Essays on Correspondence Instruction—I* (The University of Wisconsin, University Extension, 1963), pp. 3–14.

and the personalities of instructors, but their value will be determined largely by the character of their content and the way in which they are presented.

The instructor is not merely a grader of papers, though a grade is placed on each assignment. Putting check marks and O.K.'s on a paper can scarcely be called teaching, for the true teacher makes comments which will contribute genuinely to the student's learning process. The grade on an assignment will reflect the instructor's careful consideration and critical judgment of the student's work, and the comments will show why a discussion or a solution of a problem is very good or why it is incorrect or of poor quality. In the latter case, suggestions should be made as to how the work can be improved. It may sometimes be wise to ask that an assignment be resubmitted. If a student who has received B's and A's on his assignments fails an examination, it may mean, though not necessarily so, that the instructor has not made an accurate evaluation of the assignments. If a student has received mediocre or low grades on his assignments with no explanation of why the work is poor or how it might be improved, he is justified in making a complaint, which he often does. Acceptance of inferior work as satisfactory does an injustice to the student who has a right to expect that the instructor will hold him to high levels of performance, that the grade will be a fairly accurate estimate of the quality of his efforts, and that he will receive suggestions for the improvement of his work.

Praise and encouragement have a definite place in the evaluation of a student's work. Instructors sometimes say that it is easier to comment on a poor paper than on a very good or excellent one. Yet, some instructors have found the practice of emphasizing "the positive and desirable qualities of the work done" to be an effective way of teaching. Professor Katherine McMullen has cited the example of a student who wrote her to say, "I have learned as much from what you told me was right as from your corrections."[2]

Additional comments, not of a critical character, are also extremely useful in stimulating the student's thinking and in arousing and sustaining interest in the course. Such comments may consist, for example, of more information, possibly a new and challenging interpretation of a particular subject, or a different way of solving a problem in mathematics. Attention may be called to new books and current magazine

[2] "Tutoring Through the Mail," *Brandenburg Memorial Essays—I*, p. 41.

articles which have some particular bearing on the topic under consideration. Unusually fine TV performances, movies, stage plays, recordings, and exhibits may be recommended in the hope they will enrich the learning process through the use of sensory and emotional experiences.[2] In his comments, the instructor has an excellent opportunity to help the student grasp the significance and wider implications of a particular topic or question in relation to the subject as a whole.

Regardless of what course is being taught, the encouragement of a student to read extensively, to engage his mind in thought, and to express his ideas with clarity, accuracy, and logical arrangement can make a valuable contribution to his total educational experience. The voluminous number of paperbacks flooding the market has brought a wide selection of outstanding books within the reach of many students, while the constant improvement of library facilities throughout the United States is providing greater opportunities for free access to books and magazines and in some instances pictures, films, and tape recordings.

The instructor who is interested in his student's progress will wish to remind him of the great importance of review in the learning process and to give him information concerning the type of examination to be used and its value in determining the final grade for the course. When a mid-course examination is required, he will be able to use it as a teaching device if the corrected examination is returned to the student.

Important as an instructor's comments are in content, much of their effectiveness will be determined by the way they are presented. Obviously, what is written should be legible and grammatically correct. Misspelling found in an instructor's comment may well lessen the student's confidence in him, while illegibility is frustrating and justifies the following reaction which a student wrote on a paper he returned to his instructor—"This may be very profound, but of no value to me, since I can't decipher it." The tone of what the instructor writes should reflect friendliness and interest, and while it may be critical, it need not be caustic. It is possible to challenge a student without resorting to sarcasm. Students seem to appreciate comments which are addressed directly to them. One student wrote she was "so glad" the instructor had "talked" to her directly, for she had feared the instructor's comments would be

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[2] Charles A. Wedemeyer, "Problems in Learning by Correspondence," *Brandenburg Memorial Essays—I*, p. 53.
Dr. Wesley C. Meierhenry, "Approaches to Undergraduate Instruction" (The University of Wisconsin Articulated Instructional Media Program, Fall Conference Program, 1964), p. 15.

on an impersonal level. A sense of humor is valuable in most situations, and correspondence teaching is no exception. I recall talking with a woman who said she still remembered, after many years, the eagerness with which she looked for the comments on her returned assignments because of their humorous and pithy content.

The need for breaking through the barrier of impersonality is a constant one and calls for conscious effort on the part of the instructor. Many instructors write introductory notes or letters on the first assignment. Others ask the students to tell them about themselves and their reasons for taking the course. All encourage the students to feel free to ask questions. The instructor makes himself a personality through his written comments on the students' papers. As the students respond to suggestion and ask questions, they, too, become personalities. The record cards kept by the instructor on his students contain standard information about age, schooling, place of residence, and occupation, but as the instructor and student work together in the course, the instructor will wish to place other personal items on the cards. Special circumstances often decrease the tempo at which a student is able to work on the assignments, as for example, the businessman living in Belgium who is required to make trips regularly to England and recently had to fly to South Africa on business. A more usual case is that of the young father who wrote that he had had no idea of how disrupting the arrival of a first child could be. The speed with which an assignment is read and returned to a student is another factor in breaking down the barrier of impersonality and in sustaining interest in the course. Dr. G. B. Childs has rightly pointed out that "Nothing is more disheartening to the student than to put forth the effort necessary to prepare an assignment and then wait and wait and wait for its return."[4] Furthermore, the corrections and suggestions for improvement of the work should reach the student in time to be useful in his further study in the course. This is equally true of a mid-course examination.

A question may be raised as to the effect of extensive comments on the student. Will he consider them as adverse criticism of his work? This will depend upon the content of the comments, the manner in which they are expressed, and also on the student's reasons for taking the course. If the comments add something of value to his knowledge, quicken his understanding, and give him helpful suggestions for study

[4] "Supervised Correspondence Instruction," *Brandenburg Memorial Essays—I*, p. 29.

and review, the student is likely to appreciate them. Notes such as the following have been received by many instructors.

> "Please feel free to comment extensively on my written assignments. I am not averse to constructive criticism."
>
> "Thank you for your interest in my progress. I am grateful for the opportunity to revise this material in what I hope will be a satisfactory manner."
>
> "I want to thank you for having taken time to write the much appreciated comments on the returned lessons. They helped to clarify many issues for me."

One high school student expressed his appreciation in rather different terms when he wrote to his instructor—"I don't know whether this is voluntary; it certainly is commendable." There will be students who fail to respond to the instructor's efforts to help him improve his work or who are rebellious over the course requirements. But the latter usually are those students who merely want credits but are unwilling to earn them. However, they are a relatively small number of the total who complete their courses.

A problem of considerable concern to teachers who are involved in a correspondence study program is the large number of "nonstarters"—those people who register for a course, neither drop it nor transfer to another course, but never send in the first assignment. These may be the people who do not have the degree of self-motivation which correspondence study requires, in addition, the perceptive instructor is aware that a study guide may fail to challenge the potential student. Thus, efforts are constantly being made to improve the format and enliven the content of study guides. The instructor, as he teaches the course, becomes aware of those parts which are not very effective, especially the questions and exercises which fail to engage the mind in thinking and a meaningful expression of ideas. His continued study and research will deepen his own understanding of the subject and acquaint him with books and other materials which might enrich the content of the course. His experience in dealing with his students and in watching their reactions to the assignments can be useful in revising the study guide, while a great deal can be learned from the experts who are experimenting with the best procedures in promoting individual learning.[5]

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[5] The University of Wisconsin Articulated Instructional Media Program, Fall Conference Report (September 30–October 1, 1964).

The successful instructor will have knowledge and competence in his subject and an appreciation of its significance in the total educational experience. He will have some understanding of the laws of learning and a genuine interest in guiding and challenging students to intellectual growth and self-improvement. He will then widen and deepen his own knowledge and appreciation through continued study and research and keeping abreast of the new knowledge, techniques, and interpretations in his subject and in the broader field of educational practices in correspondence instruction. His awareness of certain limitations in this type of teaching will impel him to use ingenuity and resourcefulness in giving the work of each student careful consideration and counsel and in sharing his own appreciation and enthusiasm for learning. The demands on an instructor in correspondence teaching are heavy, but they carry rich rewards for the individual who sees education as a lifelong endeavor of study, intellectual growth, and the quickening of one's appreciation for the things of the mind and the spirit.

Margaret I. Knowles

PROMOTING CORRESPONDENCE INSTRUCTION

Clarence A. Schoenfeld*

The promotion of correspondence instruction merits at least as much time, talent, and energy as curriculum planning and course development. When we reach the day that the PR communicator is brought fully into the university extension team, home study will come into its own.

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University extension is not simply compounded of response to demand. The utilitarian university is sensitive to the felt needs of its constituency, yes, but programming does not wait passively upon requests for service.[1] As Charles R. Van Hise put it so pragmatically long ago: "We in education ought to be at least as vigorous as the brewing interests. . . . It is our aim to take out knowledge whether the people ask for it or not."[2]

An acceptance of this philosophy leads university extension in general and correspondence instruction in particular into a set of activities similar to, although more refined than, what business would call *product development and promotion.* Commentators on the university extension scene are unanimous in saying that extension must "make clear to many groups the meaning and value of education . . . and point out the availability of specific educational opportunities"[3] by "utilizing to the fullest degree the many publicity methods by which university extension activities may be promoted."[4]

All this is easier said than done. Merely to describe, for example, correspondence study in general or a specific course in particular does not offer the potential consumer those "reasons why" which modern advertising theory says are essential to stimulating a response. In other words, in Madison Avenue parlance, you have to talk about not the steak but the sizzle. Yet it is not at all difficult to offend the sensibilities of residence faculty with what they consider a commercial approach demeaning to the dignity of the university, and even the National University Extension Association has adopted a code of fair practices which frowns on anything remotely resembling "hard sell." Furthermore, the costs of promotion are measurable. Nonetheless the typical extension operation devotes considerable time, talent, and money to product publicity through a wide variety of media.

If we have erred anywhere along the line in the public relations of correspondence study, it is not that we have failed to communicate too

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[1] Richard J. Starr, "The Public Conscience of the University" (Chicago, 1955), mimeograph, pp. 21–23.

[2] *Proceedings,* National Association of State Universities (Bangor, 1908), p. 131.

[3] John A. Morton, *University Extension in the United States* (Birmingham, University of Alabama Press, 1953), p. 138.

[4] *Extension Service,* Survey of Land-Grant Colleges and Universities (Washington, U.S. Office of Education, 1930), p. 93.

little but that we have failed to communicate in a coordinated fashion. Sound public relations can be neither sporadic nor undisciplined. It must stem from a well-conceived plan and proceed according to reasonable assumptions and attainable objectives. I choose to call this complex of principles and procedures "the ten M's in the communication mix."[5]

In the course of a PR assignment for a sporting arms and ammunition company, I once put out a release on squirrel hunting which included a recipe for squirrel pie. I made only one mistake. I forgot to mention that after stirring in all the ingredients you put the pie in the oven before you put it on the table! I am not going to make the same mistake in this article. Even at the risk of stating the obvious, I am going to include in this discussion of the PR communications process all the key phases of the "mix" that PR communicators follow.

There are ten: analyzing the messenger, recognizing the mission, defining the message, identifying the molders of public opinion, selecting the media, budgeting the money, mating encoder and decoder, managing the campaign, measuring results, and making modifications.

This process is best viewed as a wheel rather than as a series of steps. You may enter the process at any stage. You may start with an assigned medium and work backward to determine the message. You may start with a prescribed budget that will dictate publics and media. The process may apply to the total ongoing PR activities of an organization, to the PR effort during a certain period of time, or to a specific PR project.

It is the latter context that we will discuss here, and we will follow a progression that starts with learning to know you, yourself.

ANALYZING THE MESSENGER

All communication begins with a communicator. As a PR communicator, your first assignment is to "know thyself." The second assignment is to know the organization you represent. This may sound superfluous, yet it is surprising how many would-be communications experts try to dodge both tasks.

When you look in the mirror you will undoubtedly see somebody with some unique strengths and some measurable flaws, PR-wise. For example, you may be strong on magazine article writing but weak on

[5] Clarence A. Schoenfeld, *Publicity Media and Methods* (New York, The Macmillan Company, 1963).

TV scripting. You may be creative as can be, yet have no cost consciousness. Or you may be long on identifying the nub of a proposal but short on evaluating performance. Your job is to recognize your aptitudes, face up to your shortcomings, capitalize on your skills, and protect yourself from your weaknesses. Don't try to be perfect; just be honest.

Besides knowing himself, the good PR communicator literally sets out to know his organization better than anybody else in it. He briefs himself on past history, present developments, and future plans. He surveys the big picture; he pokes into all the nooks and crannies. Everywhere he can he seeks grist for his mill. By design he builds himself into every possible channel of internal communication. By design he keeps his ear tuned to external communication. The data he continuously collects he evaluates in terms of accuracy and significance, and collates for filing purposes against the day when he will elect to disseminate a particular story or brochure.

RECOGNIZING THE MISSION

The broad mission of PR communications, of course, is to support an organization's PR program. Hence the objectives of the PR program become the strategic goals of the communications effort. These goals in turn reflect the purposes and aspirations of the organization itself. Nothing so distinguishes PR communications from aimless publicity as this concentration on a well-conceived mission. If you as a PR communicator haven't been supplied with a set of objectives, you should take the bull by the horns and draft a plan for prompt administrative review.

Within the framework of your assigned strategic goals, you will select intermediate tactical targets, the attainment of which are essential to the capture of long-range objectives. While it may not be necessary always to set down in writing these general and specific missions, to do so serves to clarify the ways in which they should complement each other.

DEFINING THE MESSAGE

Ask Francis Pray, vice president of the College Relations Council for Financial Aid to Education, what is a basic step in the PR communications process, and he will tell you:

> "It is not starting up with a lot of TV and newspaper publicity releases. First you must develop a clear, vigorous, and inspiring written statement about your institution."

What *exactly* do you want to communicate? The subject matter of PR will vary considerably from organization to organization, of course; and within each organization the message will be markedly shaped by the other ingredients in the PR communications mix. *Decide* on a specific message or series of messages, and then *refine* it.

All too often PR communicators procrastinate and delay when it comes to defining our messages clearly, succinctly, candidly. The problem is typically not that we don't know enough about the messenger or the mission but that we know too much. So we resist distilling the message down to the nub that is essential for planning purposes.

IDENTIFYING THE MOLDERS OF PUBLIC OPINION

For any organization larger than the country store we can no longer really practice PR efficiently on a person-to-person basis. So we do the next best thing. We classify our clientele into meaningful groups, or publics, and within these publics, we try to identify the molders of public opinion who can help us, wittingly or unwittingly.

Getting to know your publics, getting to know all about them, ranks with learning your own role as a PR communicator.

Your publics can be usefully classified in a number of ways with respect to their (1) physical or functional relationship to your organization, (2) inherent characteristics, (3) knowledge of a particular subject, (4) attitude toward you, (5) susceptibility to new ideas, and (6) social status. These classifications are not mutually exclusive; they overlap in constantly shifting patterns.

Having once classified and evaluated your publics, you then search to identify the molders of opinion within each public. This isn't easy. The opinion molders are not necessarily the individuals with titles or positions of apparent leadership. They are not necessarily the individuals who control the obvious channels of communication within the public. For example, for many years one of the key opinion molders in my hometown was a local barber who never held public office and never had a remark quoted in the local weekly paper.

Public opinion molders keep shifting. Get one of them in your net one day and he may have abdicated the next. To find them, you use all the research devices applicable to each public. Once they are identified, you can rifle special messages directly to them.

SELECTING THE MEDIA

As a PR communicator you have a wide range of media from which to choose, a medium being the tool, device, or occasion you use as a vehicle for transmitting your message. As a matter of fact, you may have more available media than you realize. To spur you into conscious recognition and consideration of all possible PR communication media, here is a checklist built around the term, *MEDIA*.

Mass media. Newspapers, magazines, radio, and network TV—carrying your news stories, feature articles, scripts, tapes, films, and institutional advertisements.

External editorial matter. Letters, fliers, bill-envelope inserts, reports, newsletters, reprints, bulletins, brochures, and handbooks that you mail or hand out.

Direct contact. Speeches, plant tours, open houses, souvenirs, meetings, committees, staged events, conferences, special "days," contests, personal conversations (direct or by phone).

Internal media. House organs, payroll envelope inserts, newsletters, manuals, reports, reading racks, bulletin boards, the grapevine, PA systems, booklets.

Audio-visual aids. Film strips, movies, slides, signs, billboards, charts, posters, displays, exhibits, closed-circuit TV.

You can readily see that there are significant differences among the media. For one thing, according to your relationship to them, they can be classified as *controlled, uncontrolled,* and *semicontrolled.* The local newspaper, for example, is an uncontrollable medium so far as you're concerned. You cannot dictate whether, when, or how your news release will appear. On the other hand, your campus house organ is a medium which you can control completely. In it you can tell any story in your own words in your own way. (Whether it will be read and believed is another matter.) In between are the semicontrolled media, like a speech your dean gives. You can ghostwrite the script, but it is more difficult to control his manner of delivery or his ad libs.

The media vary also in their relationships to the various publics. Some are *shotgun* media. Through them you can spray out a story but you have no way of knowing for sure whom it will hit. A large general-circulation magazine is a shotgun medium. Other media are *rifle* media with which you can "hit" a target of very small circumference. For example, given a good set of addresses, you can "home in" on a specific

audience by direct mail. In between are the shotgun-slug media, like a trade journal, an exhibit, or a regional newspaper, through which you can focus your aim somewhat.

Normally, to transmit any given message you will select a number of media. PR communication is most effective when it utilizes a variety of mutually supporting devices. Putting all your eggs in one basket is ordinarily to be avoided. On the other hand, budget considerations will seldom allow us to employ all possible media. The trick comes in selecting enough to do the job well without wasting money. There is no formula for this that I know of other than using your head.

BUDGETING THE MONEY

They tell the story of the PR communicator who died and went where even some PR communicators are bound to go. Much to his surprise, upon his arrival in the underworld he was named editor of the newspaper as well as postmaster general, and he was assured that a host of other media were at his command. True to his profession, he began to prepare an elaborate PR plan.

"Just how much money do I have to work with?" he asked.

"Oh," Satan replied. "There isn't any money for PR communications down here. That's the hell of it!"

Much as he might wish he lived in a Valhalla where the PR cornucopia held a never-ending supply of cash, the facts of life are that the PR communicator will almost always be circumscribed by a budget. Consequently he must be as cost-conscious as he is media-conscious.

Costs of the various PR communication procedures and devices vary enormously from city to city, region to region, year to year, organization to organization, audience to audience. For example, in 1955 I produced and distributed an adequate folder to The University of Wisconsin staff for $80 a thousand, but to do the same type of job in a New York university today might cost $160 a thousand.

The answer is for each PR communicator to develop his own *experience tables* that will give him clues to the costs of the devices he normally employs, and get tight estimates on jobs not covered by his experience.

One approach is to develop a PR communications plan that *you* would *like* to implement, and let top management decide how much of it *they* would like to *pay* for. An alternative is to ask management to quote

you the maximum figure they will stand still for and then for you to parcel this out among the media according to your best judgment.

Inevitably the net result will be a compromise between the ideal and the practical. While PR results are not always directly correlated with money invested, in general in PR as in anything else you get what you pay for.

MATING ENCODER AND DECODER

The communications phenomenon can be reduced to four elements:

1. The individual with a message to transmit—the "encoder."
2. The individual for whom the message is intended—the "decoder."
3. The message itself.
4. Unifying experiences, backgrounds, or goals that enable the message to be formulated and interpreted efficiently and effectively.

Element 4 is the key. By capitalizing on known common denominators, the encoder can lend to his message those aspects of appeal, clarity, force, and tone that go a long way to guaranteeing its willing reception and accurate interpretation on the part of the decoder. When he fails to operate in a logical milieu, the encoder complicates or even neglects the communications effect.

It follows, then, that there is no such thing as a sound message in the abstract. A message is sound only as it reflects Element 4—a mating of encoder decoder experiences, background, and goals.

For example, here is a typical message, paragraph 28a of *U. S. Army Manual ST 100–10–1:*

"Area commands are established in the CZ of the OTO as required, as subordinate elements of TALOG, BALOG, or ADLOG."

To a layman this message is gibberish. To a student at the Command and General Staff College, it is the soul of conciseness and coherence. The difference lies in the varying backgrounds of the civilian and soldier.

As a PR communicator your primary mission is to perform this marriage of messenger, media, and publics through the method of a well-tailored message.

MANAGING THE CAMPAIGN

Managing the PR campaign is a crucial aspect of your job as a PR communicator. I can't overstate the importance of *outlining* the campaign before it actually gets underway.

A campaign outline, or plan, is a synthesis of all the phases of the PR communication process we have already discussed. While it is not absolutely essential that your plan be written out, to do so will facilitate its management mightily.

There is no set pattern for a PR communications plan. It can cover an extended period of time, a specific period, or a particular project. Its major elements should reflect the needs of the problem at hand. Most plans have these elements in common.

1. A general introductory statement which summarizes succinctly what you propose to do, perhaps in conjunction with a statement of the principal problem being attacked.
2. A statement which clarifies the scope of the plan.
3. A statement of the purpose of the plan itself.
4. A list of program objectives, possibly broken down into long-range goals and specific targets.
5. An outline of the projects, tactics, tasks, procedures, functions, execution, or what have you encompassed in the program.
6. A description of the organization involved and an assignment of responsibilities.
7. A summary of policies, guidelines, or major themes.
8. A schedule or timetable.
9. A recapitulation or summary.

On occasion the plan may go into detail on background, publics, media, or other appropriate angles. The more people are involved in the implementation of the campaign, the more comprehensive the plan should be. You can run a good PR communications campaign without a written plan, but you can run a better campaign with a written guide.

There is one pitfall to a tightly structured campaign, however, and that is the possibility the plan will lead you into inflexibility. The savvy PR communicator is always light on his feet, ready to change his approach with any change in the situation. If a written plan tends to "freeze" you, throw the plan away.

MEASURING RESULTS

The PR communications process ends where it begins—with research. Only by evaluating, frankly and honestly, the results of your efforts will you be able to reinforce effective methods, cancel ineffective devices, plug gaps, and move on to an even more successful operation.

To recall the means of managed measuring, think of the word, *RESEARCH:*

Readability tests. Applying the Flesch, Gunning, and other readability formulas to your PR communications copy at regular intervals will provide a valuable clue as to whether or not your copy is capable of being understood by an intended audience. It will not tell you, of course, whether or not the audience has seen or believed your message.

Expert interviews in depth. A professional interviewer can provide you sound data on public points of view and on the extent to which your message has been exposed and assimilated. Properly done, this type of research can be expensive, but the results frequently are real "eye openers." Some of the insights gained may save you money in the long run. For example, The University of Wisconsin Summer Sessions used to mail its promotional folders first class on the assumption that this enhanced receptivity. By depth-interviewing a representative sample of prospective students, we learned that they typically will open anything from a university, regardless of what kind of stamp it has. This clue saved us $500 a year.

Surveys, polls, questionnaires. Professional surveys and polls can also provide valuable data, but often at a high cost. As a matter of fact you should beware of the quickie survey distinguished only by its cheapness. Amateur questionnaires can be particularly misleading because it's tough to determine just what segment of the universe you're actually sampling.

Everyday feedback. Letters, editorials, field reports, phone calls, chance conversations—these informal "ears to the ground" are by no means to be ignored in measuring the effectiveness of a PR communications program, provided they're properly evaluated.

Advisory committees, panels, and forums. Such devices are an excellent formal means of sustained contact with various publics. There is one pitfall in their use: A committee will expect you to follow its reasoned recommendations. There's no fury like a chairman scorned.

Reports from the profession. The publications of the PR profession and its related arts are gold mines of information about other PR programs that can have real relevance to your own situation. So are the publications covering the type of enterprise which you serve.

Content analysis. A careful scouting of the mass media you attempt to use will give you a running record of your ability to get into people's minds.

Hunch. Even in a day of digital computers there is a role for horse sense—horse sense, you know, being best defined as what keeps a horse from betting on a man. For instance, a paragraph or so ago I said that The University of Wisconsin has discovered it doesn't have to first-class its direct-mail literature to assure visibility. If you have some horse sense, you will know that this finding is not automatically applicable to all direct-mail campaigns because an envelope marked, for example, *Living and Learning* doesn't have the prestige of a university corner-card. If you have good horse sense, you will have read a recent survey in *The Reporter of Direct Mail Advertising* which indicates that business executives respond better to first-class mail. With these clues as a guide, you can "hunch" your own tactics until you're able to survey your own clientele.

MAKING MODIFICATIONS

It is not enough, of course, merely to measure results. Unless the fruits of measuring are reflected in changed practices, the exercise isn't worth the time and money. Making modifications, then, is the final stage in the PR communications process: making modifications in your target, your aim, your ammunition, and even in your weapon. This is the test of the real pro in PR—not that he doesn't make mistakes but that he doesn't knowingly make the same mistake twice.

Correspondence is one of the most seasoned forms of instruction, yet it is ideally suited to the insistent demands of space-age education. There are literally hundreds of thousands of potential students in this country and around the world who are eager and able to profit from study by mail were the opportunities for such education to be brought forcefully to their attention. The promotion of correspondence instruction merits at least as much time, talent, and energy as curriculum planning and course development. When we reach the day when the PR communicator is brought fully into the university extension team, home study will come into its own.

Clay Schoenfeld

A SELF-EVALUATION STUDY OF THE CORRESPONDENCE METHOD

Harold Glen Clark*

The process of self-evaluation will achieve important results for the institution if the right start is made by obtaining strong institutional support, by using a well-prepared instrument of evaluation, by creating a simple and practical structure for organizing and administering the evaluation, by using an outside professional evaluator to assist at an appropriate point, and by conscientiously following through the recommendations derived from the evaluation.

*Dr. Harold Glen Clark is Dean, Division of Continuing Education, Brigham Young University. The self-evaluation project described in this essay was initiated by Dean Clark on the invitation of the Correspondence Study Division of the NUEA. The evaluation instruments used by the BYU team were developed by the Correspondence Study Division with the assistance of the Center for the Study of Liberal Education for Adults.

Is it possible for an institution to examine its correspondence programs and come out of the experience with an intelligent recognition of its weaknesses and strengths?

In the fall of 1962, the National University Extension Association, Correspondence Division invited several institutions, including Brigham Young University, to make self-evaluation experimental studies of their correspondence departments.

On the national level the NUEA, with the cooperation of the Center for the Study of Liberal Education, organized a committee to formulate an instrument of self-evaluation. The basic assumption was that this instrument would be useful to any institution willing to take the time and energy required to think through what they ought to be doing in a correspondence study program and "to appraise systematically how well they are doing it."

When the task force had completed its mission, the instrument of evaluation contained a criterion for each of these five areas:

Philosophy
Instruction
Staff
Student services
Administration

The criterion in each instance indicated what the particular area of operation might expect to accomplish and the standards or attitudes and means that might be employed to bring about these accomplishments.

The Brigham Young University Division of Continuing Education, through its Office of the Dean and the chairman of its Home Study Department, enlisted the interest of the Academic Vice-President in organizing a committee to conduct a survey of correspondence study utilizing the NUEA instrument of evaluation. Two purposes were kept in mind: the first, to evaluate the instrument; and the second, to evaluate the Home Study Department program.

A general chairman was selected by the Vice-President, and the chairman, in turn, selected five committee chairmen, each one presiding over a sectional assignment. Working committees consisted of approximately four members. The general chairman, through a series of instructional and progress report meetings and through written instructions, charged each section with its responsibilities and received approval of a set-time work schedule. In later meetings problems encountered in overlapping of areas were eliminated. Necessary changes were made due to the size

of the task and the quality desired. Clerical, interview, and other services needed to increase the validity of the report were provided.

The last meeting was held on March 8, 1963, at which time rough drafts were handed in. Final drafts were received on April 1 and on May 1, 1963, and the completed report was placed in the hands of the Academic Vice-President.

The first general conclusion reached was that with a few minor revisions the guide to self-evaluation prepared by the National University Extension Association was a sound and useful instrument which any university might employ in probing for both weaknesses and strengths in its correspondence program.

The second general conclusion was that the University had a growing, active home study program "serving several thousand external students and contributing thereby to the overall mission of the BYU." However, this conclusion did not blind the committee to practices and procedures in need of improvement.

Thirty-two suggestions were made as a result of this self-evaluation. By August of 1964, action had been taken on twenty-five of these recommendations, and the other seven had been progressively pursued. Improved communication with the academic departments, a clarification of the goals of correspondence, and an atmosphere of high morale were in evidence as a result of this self-examination.

The dangers of imposing value judgments of the institution were not entirely eliminated, and certain weaknesses inadvertently went unexamined; but the overall program of introspection was rewarding in terms of time expended and an out-of-pocket expense of some $900, including the printing of the self-evaluation report.

The final draft of the proposals submitted by the Self-Evaluation Committee began with the suggestion that a Guide for Correspondence Teachers be prepared and the request that an outside expert be called in to give a critique of the self-evaluation study. In between the range of these two recommendations, the report included a variety of proposals. The following are typical suggestions:

1. Conduct an annual training meeting with all correspondence faculty.
2. Solicit feedback from students through personal interview or opinionnaires.
3. Make available a quality CS syllabus as a guide to new instructors preparing courses.

4. Prepare specific audio-visual materials for certain courses, and make them available at low cost to CS students.
5. Formulate midterm examinations.
6. Conduct a periodic review of all courses every three years.
7. Provide suitable criteria and a system for evaluating CS courses and tests.
8. Plan cooperative CS research using graduate students.
9. Prepare an organizational flow chart showing responsibility and authority in assignments.
10. Make improvements in space and facilities.
11. Upgrade the rank and salary of CS administrators.
12. Provide descriptions of duties for new instructors.
13. Make provisions for professionally trained persons to edit CS syllabi.
14. Increase the CS library, and extend the time of library loans.
15. Provide cataloging services from the BYU central library.
16. Improve communication between the library and CS instructor.
17. Expand the CS collection of library books.
18. Improve the line of communication between CS administration and faculty members who are willing and prepared to teach needed correspondence courses.
19. Retain a percentage of so-called annual "profits" for use in expansion of the CS program.
20. Liberalize the policy on refunds.

Five steps seemed important in the achievement of results from this self-evaluation study:

1. *The right start* seemed especially strategic, with the support of the President and Academic Vice-President a "must." Selling points made to the administration in behalf of the proposed evaluation included prestige values of the study, favor with accrediting agencies for taking the initiative in raising standards, the support of faculty and academic departments as a result of their involvement, and the plain logic of participation by the University in a sound, needed educational survey.
2. *The use of a well-prepared instrument of evaluation* saved time, built confidence in the project, and provided ready direction to the energies of the working team. A well-conceived, ready-to-use guide, with criteria and standards which can be modified or improved upon as needed, is basic to successful self-measurement. Any self-evaluation effort with its team of evaluators can well

afford to take the time necessary to obtain the professional help required to build a good instrument of evaluation.

3. *Organization and administration* was characterized by simplicity in structure. Commitment by committee members to do a specific job within a reasonable period of time should be obtained. The need for dedicated service should be outlined sincerely to them by the highest administrative officer. The ever-ready, efficient help of the Continuing Education staff as consultants means much to the success of the self-study. Any move by the administration which makes the team feel that their contributions are needed and that they will be considered and respected is a smart move.
4. *The use of an outside professional evaluator* gave weight and seriousness of purpose to the project, increased its validity, and called attention to unexamined areas. BYU emphasized this important step in a successful evaluation through the visit of Charles A. Wedemeyer, Director of Instruction & Evaluation, University Extension, The University of Wisconsin. His critique called attention to the need for moving into new areas of media, methods, and services. As a result of his interviews, he sensed a certain financial insecurity and an uncertainty as to mission and challenged faculty and administration to raise the prestige of the CS program on the University campus. He outlined a variety of creative projects in audio-visual radio tele-lecture, programmed learning, and modern duplicating methods. New horizons in relationships between the CS department and the residence academic departments with respect to curriculum, art work, libraries, and general subject content were unfolded. He concluded his critique with a challenge to fulfill the special mission of CS in a church-sponsored university.
5. *The follow-through* was the last important step. The task of compiling a printed summary of procedures and findings was built into the duties of the chairman of the evaluation committee at a very early stage. The nailing down and summarizing function was also considered a part of the duty of each committee member, who was periodically reminded of this obligation and instructed in how it might be accomplished to fulfill the purposes of the study. The summary of these recommendations, along with the statement of the Dean of Continuing Education as to what had or would be done about each, was made a part of the finished report.

Some of the resultant changes made in 1965, important to a growing CS department, were the move to an adequate physical plant, the use of the computer in repetitive office operations, and the employment of a

new department head with his doctorate in educational administration. The change with most promise was the increased confidence engendered in the correspondence method. This was accomplished by stressing an evaluation of the University's own potentialities rather than a program with emphasis on the measurement of one institution against another. At the completion of this self-analysis, correspondence study loomed larger as a valuable educational medium—too important and too useful to the University for it to tolerate weaknesses or poor procedures. A final and significant gain was the feeling that self-evaluation is a sound educational tool which can be used again and again with profit in correspondence study as in other areas of continuing education.

Harold Glen Clark

REVIEW OF RESEARCH IN CORRESPONDENCE STUDY

Gayle B. Childs*

Research is not a notable emphasis in the field of correspondence study. There is, however, a persistent and continuing effort on the part of some institutions to carry on research programs, and a notable improvement in research studies. The next five years may bring increased recognition of the importance of research to correspondence education.

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Correspondence study today is making progress on many fronts. It is, however, probably safe to say that if one were to make a list of the areas of notable achievement in the correspondence study field, research would not head the list. Yet, while we do not have a great deal to be proud of in this regard, neither is the picture entirely discouraging.

No one has carefully surveyed the research situation in correspondence study in recent years. Even so, the few partial and limited efforts which have been made in this direction reveal a persistent and continuing effort on the part of some institutions to carry on research programs. Other isolated studies appear in institutions which do not conduct research on a continuing basis. The result of all of this effort is a gradual increase in our total knowledge about correspondence instruction.

It shouldn't really be necessary to defend the idea that research is something in which correspondence study directors should all, although perhaps in varying degrees, be engaged. Yet the fact that practice in this respect is so variable may indicate that either they, or their superiors, do not attach sufficient importance to research activity to give it high priority in terms of financial support or personnel assignments.

Why should we do research? The basic answer, of course, is that only in this way can we get objective answers to our many problems. No doubt most of us have through experience, through trial and error, through the application of common sense, and through pooled judgments found satisfactory ways of doing things. They work. The success of our programs and our growing enrollments attest to this.

But how do we really know if the way we are proceeding is the best way? And should we be satisfied with any procedure unless it is? Only by constant and continual evaluation and experimentation can we hope to find answers to our questions—answers that we can accept with a reasonable degree of assurance.

A second reason for doing research, and this is closely allied to the reason just given, is that research provides us with a basis for making decisions. All of us make decisions constantly, often on quite insubstantial evidence and sometimes on the basis of no evidence at all. The result is that we give free play to our prejudices and our preconceptions.

For evidence that this is so, we need only look at the great variety of practices among our correspondence study pograms. Whether we compare syllabi, teaching practices, policies, or administrative rules and regulations, the result is the same. Some diversity in operation is inevitable, and even desirable. Since our situations differ, some variation must follow

to permit adjustment to local situations. However, not anywhere near all of the variety that exists can be explained on this basis.

Let us take an example. The study of completion rates which was conducted several years ago by the Research Committee of the Division of Correspondence Study of the National University Extension Association, and the basis of an analysis of grades earned by 21,768 enrollees, found that students in a one- or two-credit-hour course who completed their work in two months or less received grades which averaged .02 of a point less on a 5-point scale than did students who completed in more than ten months. On the other hand, students who completed work in three- to five-semester-hour courses in two months or less received grades which averaged .08 of a point more on a 5-point scale than students who completed in over ten months. These differences are so minute that what this actually means is that the time taken to complete a college correspondence study course has absolutely no practical effect on grades received.

The same study shows that, for 6,147 students at the high school level, those who completed in two months or less received grades which averaged .23 of a point higher on a 5-point scale than those who completed in more than ten months. Again, the difference is much too small to be meaningful.

A study completed in 1963 by Douglas Sjogren at the University of Nebraska revealed, among other things, that there was a difference of .19 of a point on a 5-point scale in favor of high school enrollees who completed in more than six months as compared to those who completed in less than six months. It is interesting to note that this difference is in the opposite direction from that found in the Divisional study referred to above but, again, the difference is so small as to be without practical significance.

What does this have to do with the decision-making process? What it means is that time taken to complete a course has little, if any, effect on student achievement. Further evidence may be necessary to establish this point with finality, but should the evidence become firm, we can eliminate educational considerations when we determine how much time students should be granted in which to complete a course. We can think in terms of administrative effectiveness without fear that students will be harmed educationally in the process.

Let us take another example. Cross, in a doctoral dissertation completed in 1936, found that students of low mental ability and low reading ability were just as likely to show improvement in a correspondence

study course as students of high mental ability or high reading ability, although students of high ability do improve more.

A study conducted by Childs shows that mental ability has little relationship to the likelihood that a student will complete a correspondence study course and that different kinds of aptitude have little relationships to likelihood of completion in various courses.

Sjogren, in the study referred to earlier, found no relationship between IQ and likelihood of completion. On the basis of evidence at hand we can recommend correspondence study to students with varying degrees of ability with reasonable assurance that all will have an opportunity to profit from the experience and that those who learn slowly will not be weeded out by the correspondence study process.

A third reason for doing research is to determine whether certain things which appear to be so really are so. This usually requires a considerable amount of repetition, which is good. Even though initial studies in a given area of research are in agreement, it is usually necessary to repeat them in different settings, with different approaches, different controls, and different emphases before the conclusion to which they point will gain acceptance. This is sometimes referred to as demonstrative research. I think there is a place for it. An example of this kind of research in a related field is the vast amount of experimentation done to determine how well students learned when taught by television.

The evidence available regarding the achievement of correspondence students as compared to that of classroom students is relatively more favorable to correspondence study than the evidence regarding the achievement of television students compared to that of classroom students is to the use of television for instruction, but the amount of evidence available regarding correspondence study is a minute fraction of that available regarding instructional television. There is much more that we could do in this area, and perhaps if we did it, we would have as many people concerned about the use of correspondence study as appear to be concerned about the instructional uses of television.

A fourth reason for carrying on research in correspondence study is that the increased professionalization of the correspondence study movement demands it. We can no longer be satisfied with procedures based on happenstance. We cannot, in good conscience, stand by and watch the rest of the educational world become more and more involved in research activity while we continue to operate on the basis of subjective judgment.

It was noted earlier that a considerable amount of research has been conducted in the field of correspondence study. The older studies have been reviewed a number of times so they will be touched upon only briefly.

One area of concern in regard to correspondence instruction is the completion rate. The best evidence we have in the United States concerning this point is the study completed by the Research Committee of the Division of Correspondence Study in 1956. This study involved 42,068 college level enrollments in thirty-two institutions. Sixty per cent of those who *enrolled* completed their courses, and 73 per cent of those who *submitted at least one lesson* went on to completion. At the high school level, twenty-four institutions submitted information concerning 17,520 enrollments. Fifty-eight per cent of those who *enrolled* completed, and 69 per cent of those who *submitted one or more lessons* completed their courses. The completion rates reported here for high school enrollees are somewhat lower than the rates reported in independent studies which have been conducted by various institutions.

In general, however, it may be said that for correspondence study programs conducted by colleges and universities, six out of ten of those who *enroll* complete their courses and more than seven out of ten of those who *start* go on to completion.

A number of studies have compared *test scores* of college correspondence study students with those of students taking the same courses in the classroom. Studies by Crump, Reavis, and Sorrenson show no difference in test scores of classroom and correspondence study students while studies by Kingsbury and one reported by the President of the University of Chicago showed differences in favor of the correspondence study group.

Studies by Feig, Larson, Mallory, Thompson, and Zeigel compared *grades* earned by college correspondence study students with those earned by classroom students in the same courses, and all found differences in favor of the correspondence study group. A similar study by Ames showed no difference in average grades received by students in the two groups.

A report from Renée Erdos states "that a comparison of the pass rates of internal and external students during the first decade of teaching the external students of the New England University, New South Wales, by correspondence showed that the pass rates of both types of students differed by less than one integer. To the nearest whole number,

both internal and external students over this period (1955–1964 inclusive) had a pass rate of 74 per cent."

A number of studies have been conducted regarding the achievement of high school correspondence study students. A master's thesis by Hanna used standardized tests to measure achievement of correspondence and classroom students in a number of subjects. In all cases performance by correspondence study students was equal to or better than that of classroom students.

A doctoral study by Meierhenry analyzed achievement in vocational subjects of high school correspondence study students and found that these students performed as well on standardized examinations as classroom students.

A study conducted by Childs compared the achievement of 1,800 high school classroom students with that of 1,200 correspondence study students in fourteen different subjects, with the two groups controlled on the basis of IQ and performance on the tests of General Educational Development. The achievement of correspondence study students exceeded that of classroom students in eleven subjects, no appreciable difference was found in one subject, and the classroom group scored higher in two subjects but the difference was not statistically significant.

A later study by Childs compared grades earned in initial university mathematics courses by students who had studied mathematics by correspondence study in high school with grades earned by students of equal ability in the same university classes who had taken high school mathematics by classroom instruction. A statistically significant difference was found in favor of the correspondence study group. In other words, the students who studied mathematics by correspondence study in high school did better work in college mathematics than students of equal ability who did not study high school mathematics by means of correspondence study.

Another study relating to the success in college of students who have taken high school work by correspondence study was conducted by the American School. An analysis of the college records of 568 American School graduates showed that 45 per cent did above-average college work compared to 30 per cent of college students generally who were in this category, 36 per cent did average work compared to 42 per cent of college students generally, and only 19 per cent of students with a correspondence study background were below average compared to 28 per cent of the general college population.

In summary it can be said that there are no studies of achievement which show that correspondence study students do less well than do classroom students, a number which show that they do as well, and a number which show that they do better. One thing of which we may be certain is that correspondence study does an excellent job of subject matter instruction.

In recent years there have been a number of attempts to combine correspondence study with television or with the use of motion pictures. In either case the student is exposed to similar experiences, in one case seeing the picture on a television screen and in the other on a motion picture screen. An extensive television-correspondence study project was carried on at the University of Nebraska, a major physics film evaluation project was conducted at The University of Wisconsin, and Parsons at Michigan explored the use of kinescopes in teaching. The general outcome of these experimental programs was that there was little difference in achievement of students in the experimental groups and in control groups consisting of regular classes.

This gives rise to interesting speculation. When the achievement of correspondence study students is compared with that of classroom students, the results tend to favor the correspondence study group more than is the case when the achievement of students enrolled in correspondence study-television classes is compared with that of students in regular classrooms. In other words, correspondence study alone appears to produce better results than are secured when correspondence study is combined with television or motion pictures. Further evidence is needed, but if future studies should substantiate the evidence now available, it would become difficult to justify the great increase in cost of adding television and motion pictures to correspondence instruction. Much more experimental work must be done before this passes the stage of speculation, but correspondence study directors should at least be cautious about plunging deeply into television programming.

A number of institutions are involved in programs for students of superior ability. An experiment was conducted at the University of Minnesota concerning the use of correspondence study for gifted students in mathematics in grades 9 and 10. In the summary the statement is made that "The demand for this type of course work was far greater than anticipated. Comments and letters from students, parents, and school personnel indicate that they felt the course was needed and very worthwhile."

The University of California reports on the achievement of able high school students who were enrolled in college level correspondence courses under a plan approved by the Board of Admissions and the Office of Relations with Schools. Under the provisions of this plan the credit earned by senior high school students is transferable to the colleges of their choice without placement examinations. According to the report, 42 per cent of those who were enrolled completed with a 56 per cent completion rate in the sciences, 41 per cent in mathematics, and 39 per cent in languages. Sixty-nine per cent of those who completed received grades of A or B.

In connection with this area of working with gifted students, the University of Nebraska has received a grant from the U. S. Office of Education to conduct an experiment involving the use of correspondence study to prepare students for advanced placement in college under the procedures of the Advanced Placement Program of the College Entrance Examination Board. Scores of correspondence study students on the Advanced Placement Examinations will be compared with scores made by students of equal ability who study in regular classrooms.

A number of studies have been conducted recently relating to the use of programmed instruction in correspondence study.

A study reported by Sven Hartman was conducted by Holm at Uppsala University. The aim of the study was to investigate the effect of delayed versus immediate feedback in the learning of verbal material. Four groups of children were given feedback in four different ways:

1. Immediately after every response.
2. Immediately after the completion of several tasks, i.e. a workbook assignment.
3. One day after having completed the workbook exercise.
4. One week after having completed the workbook exercise.

Groups 2 and 3 performed significantly better than groups 1 and 4 with group 2 doing somewhat but not significantly better than group 3. This study indicates that learning proceeds better when feedback occurs at the completion of a series of related tasks or one day after the tasks are completed than it does if feedback immediately follows each individual response or occurs after a week has intervened between study and feedback.

An experiment conducted jointly by the American School and Encyclopedia Brittanica comparing the effectiveness of programmed learning

and correspondence instruction shows interesting results. The experimental group consisted of students enrolled in a programmed course in second-year high school algebra; control groups consisted of three groups of students enrolled in a correspondence course covering similar material.

The results show that (a) "The mean performance of students using conventional correspondence materials (as measured by a standardized achievement test) was superior in four out of five tests of significance." (b) "The mean learning time of students using the Temac programmed instruction was faster in three out of five tests of significance."

Similar results were found by Sjogren, at the University of Nebraska, who conducted a major study in this area under a grant from the Cooperative Research Program of the U. S. Office of Education. The subjects involved were ninth grade English and ninth grade algebra. Three methods of instruction were employed in each subject, with one group using only programmed materials, a second group using regular correspondence materials, and a third group using correspondence study materials in which certain parts of the course were programmed. He reported the results as follows: "The main comparisons of the study were on the variables of achievement, completion time, and dropout rate. No significant differences were found in English or algebra among the achievement test means or the dropout rate of the groups studying by the three methods. The algebra students who studied the set using progammed materials as the primary study material completed the course in considerably less mean time than the students using materials with supplementary programs or the regular correspondence study course. In the English course no significant difference was found among the groups in mean completion time."

In addition to the major study reported above, Sjogren conducted several less extensive experiments involving programmed instruction. One study had to do with the use of English 2600 (a programmed text) in teaching an experimental group of college freshmen. A control group consisted of students enrolled in a correspondence study course. The results show that in both groups a significant number of persons gained in scores from pretest to post-test, but there was no significant difference between the two groups in the gain shown or on their final test performance.

In another experiment involving programmed materials, the *Tutortext in Trigonometry* by Crowder and Martin was used to teach a unit in trigonometry. A control group used a regular correspondence course for instruction over the same content. The average IQ of the program

group was 125; that of the control group was 124. No significant differences were found in completion rate or in average final grade, although completion rate and average grade were slightly higher for the control group.

Two other experiments were conducted in which one group worked with programmed materials and the other with regular correspondence materials. One involved a unit on the slide rule and the other a unit on teaching logarithms. In neither study was there a significant difference found between the experimental and control groups either in completion rate or in achievement.

To date, none of the studies conducted at Nebraska suggest that programmed instruction produces learning results superior to those developed by regular correspondence study procedures.

Helen Kempfer reports on the results of a questionnaire survey of all schools in the National University Extension Association, the National Home Study Council, and all known federal agency schools. "Out of 120 schools which responded, 23 were using programmed instruction in one form or another, and others were considering its use or developing programmed materials. In general, replies were favorable to programmed instruction in correspondence courses. It was reported that students tend to like programmed instruction and to complete their courses in less time or with higher achievement than in courses not using programmed instruction. Major objections to programmed instruction were cost, bulkiness of materials, and likelihood of boredom if long courses were fully programmed."

In summary the evidence available seems to suggest that students enrolled in programmed correspondence study courses complete these courses in somewhat less time than students enrolled in regular correspondence courses but that achievement of students is approximately the same under each method. If there is a learning advantage, it rests with the regular correspondence study method.

One of the seriously neglected areas of correspondence study, as far as research is concerned, is that of the methodology of correspondence instruction. However, a few studies in this area are beginning to appear.

A study by Sjogren involved the effect of differential teaching methods by correspondence study teachers on student performance in correspondence courses. Nine teachers and 158 students were involved. Teachers used three different methods of evaluating papers submitted by students. In group I the teacher just checked the items missed without comment.

For group II the teacher checked items missed but also wrote in suggestions and corrections and made encouraging comments on the paper. Group III received the same treatment as group II along with an attempt by the teacher to establish a personal or supportive relationship with the student by personalized comment on the papers and the exchange of personal letters.

The results of this study showed no difference in completion rate among the three groups and very minor differences in average final grade. This study is too limited to justify any definite conclusions but it does suggest that this is an area of activity concerning which we need to look quite carefully at our present procedures.

Rowbotham and Huttman report an experiment involving the use of instructional television in teaching a course in business management. Procedure involved in teaching the course included use of a weekly series of computer-scored tests to serve as a study motivation device. Questionnaires were sent out at the beginning and end of the course to the 304 enrollees. Information was received about the characteristics of the enrollees, their attitudes toward the course, and their opinions about the value of instructional television.

In regard to methodology "one of the chief conclusions drawn from the experience of administering 'Business Guidelines' was that a series of frequent tests does serve as a strong motivating force and an effective method of sustaining student interest. The prospect of a test which the student knows will not consume a great deal of his time and energy appears to assist his concentration upon the subject matter; the challenge of the test seems invigorating; and the mildly suspenseful wait for return of the test results carried interest forward into subsequent phases of the course."

Another study involving methodology is reported by the DeVry Technical Institute. In this study, 20,000 lessons were printed in which practice exercises were distributed throughout the lesson so as to be closely associated with related text materials. To provide for control, 20,000 lessons were printed in which the practice exercises were grouped at the end of the lessons. Precautions were taken to eliminate other variables.

An experimental group of 1,000 students used the lessons with practice exercises located close to the test material, and a control group of equal size used the lessons with practice exercises at the end of the lessons. Identical examinations were used after each lesson by students in each group. Students who completed answered a total of 200 questions.

Students in the experimental group showed significantly better results on 141 of the 200 questions. On the remaining 59 questions, students in both groups did equally well or the performance of the control group was better than that of the experimental group.

The lesson completion rate for both groups was essentially the same. This was also true of the attrition rate.

An analysis of student responses, reported by Superintendent New of the Chartered Insurance Institute, Tuition Service, in England, provides additional information in the area of methodology. The report states, "The Institute examinations are not compulsory and students are free to choose whether or not they submit all of the test papers set in their correspondence course. . . . Research into the relationship between examination results and written work submitted throughout studies shows without doubt the value of the practice of answering test papers. A large random selection of students showed a marked connection between success and tests written throughout the period of preparation, sufficient to conclude that the greater the number of papers worked during the study session, the greater the chances of examination success."

Conclusions drawn from the very limited evidence available about teaching by correspondence study must necessarily be extremely tentative. What the evidence seems to suggest is that the study and practice elements of a correspondence study course should be closely tied together in the syllabus, that the nature of the response made by the teacher who evaluates student lessons is not in itself important, but that what the syllabus and/or the teacher can do to elicit student responses in the form of either tests or written assignments does increase student interest and achievement.

Some studies have been conducted which relate to the characteristics of those who enroll for correspondence instruction. Only two will be reported: one concerning college students and one concerning high school students.

A report by Rowbotham and Simpson is concerned with an analysis at the University of California of 1,075 requests for correspondence study catalogs. The requests were checked against files to determine who enrolled. It was found that—

1. Through age 35 more men than women enrolled; beyond age 35 more women enrolled.
2. Heaviest enrollments were in the 21–25 year range.

3. Thirty-five per cent of the enrollees held a bachelor's degree; 42 per cent had some college training.
4. Half of the group had educational objectives, and half had personal goals.
5. For those up to age 30, educational objectives predominated; beyond that age, personal goals were more important.
6. Many occupations were represented, but teachers with 19 per cent and housewives with 16 per cent of the enrollment constituted the largest groups.

A detailed study was made at the University of Nebraska of the characteristics of 838 students who were enrolled in high school correspondence study courses. Every tenth student was selected to give a representative cross section of the total student body. Only a few of the results will be reported.

1. There was little difference in the completion rate according to sex, with boys having a slightly better completion rate.
2. There is no significant relationship between sex and grades received.
3. A significant difference was found between age and completion, with students 15 or under much more likely to complete than those who were older.
4. There is a consistent tendency for average grades to decline as age increases.
5. Students in grades 9 and 10 are much more likely to complete courses than those in grades 11 and 12 or out of school.
6. Students in grades 9 and 10 receive higher grades than those in grades 11 and 12.
7. Students taking four or five subjects are much more likely to complete than students who take three courses or less, and overseas students are more likely to complete than those in their home country.
8. Overseas students earn higher grades than those in their home country.
9. A student in a small school is more likely to complete than one in a large school or not in school.
10. Students in small high schools or those out of school get higher grades than students in large schools.

11. Students in social studies or business education courses are more likely to complete than those in English, mathematics, or science.

12. There is no relationship between grades and length of time taken to complete a course.

13. Likelihood of completion is not related to IQ.

14. There is a significant relationship between IQ and grades received.

This report should not close without a brief comment on some areas in which more research should be conducted.

One is the area of methodology. We need to know a great deal more about how to teach by correspondence study. No one has yet delved deeply into this area of research.

Another area we need to expand is that which has to do with increasing our knowledge about our students. It was stated earlier that there is increasing activity in this phase of our research efforts and that this is commendable. Much more remains to be done. For example, in March, 1962, the Center for the Study of Liberal Education for Adults published a bulletin by Knox entitled, *The Audience for Liberal Adult Education.* This forty-page publication provides a great deal of information about those adults who engage in programs of liberal education. We could not possibly present the same amount of information about students who participate in correspondence study.

We need much more evidence regarding the achievement of correspondence study students. Little has been done recently on this subject, and it is quite possible that changes both in correspondence study and in classroom teaching procedures will cause results to be obtained that vary from those secured earlier. Even if they confirm earlier reports, we need to know this. Also, we need to secure continuing evidence that the procedures we are using are successful. If they are not, we need to know it.

Finally, we need to know more about the attitudes of those who enroll for correspondence study and how these attitudes affect performance. Some work has been done in this area. Akers reports on a study conducted in Oregon, and Wisconsin has done perhaps more than any other institution in studying this subject. Again, as in other areas, much more remains to be done.

The extensive study of correspondence instruction now being conducted by Dr. McKenzie and his associates for the American Council on

Education will no doubt throw much light on many facets of correspondence education in the United States. Undoubtedly many of the matters about which information is needed will be clarified when the report of this study appears.

This report began by stating that the field of correspondence study is not noted for its achievements in the area of research. This paper, however, may have shown that progress is being made in this respect. The next five years should bring even better results in this area.

Gayle B. Childs

EXTENSION EDUCATION AND ITS TOOLS IN THE NEXT HALF CENTURY

Charles A. Wedemeyer*

What will university extension look like in fifty years? This paper suggests the changes that may come about in the extension teacher, the student, the curriculum, and the tools used by extension in 2015.

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". . . We are asking you to look at the tools of education, such as correspondence, TV, and radio, and speculate on how these may be used in the coming years. . . ."

—Assignment to the author

It is intriguing to think of correspondence, radio, and TV as tools of education. The metaphor, while it oversimplifies, does fulfill its function of suggesting a resemblance between, let's say, a shaper in the hands of a carpenter and correspondence, radio or TV in the hands of an educator. The concept seems apt: The tool is used to effect a result on the thing worked upon.

There are, of course, numerous other tools used by educators: programmed materials, teaching machines, books, visuals of all kinds, audio materials, computers, laboratories, libraries, and many other kinds of structures—classrooms, auditoria, offices, carrels.

The educator, however, does not simply employ a tool as such. In using correspondence, radio, or TV he employs a *process* of teaching which in turn is used by the student as a process of learning. While the postal system, radio, television, and other devices or structures do exist as such, these tools are not used for systematic teaching unless they are part of a larger whole, and that whole is the instructional process.

The tool metaphor becomes less appropriate when one realizes that the tool itself (the radio, the classroom) does not alone produce the result on the learner; it is what the learner does that eventually produces changes in his behavior. To be sure, the invention and availability of tools have profound effects on the behavior of the tool users and on the effects produced. But in education, the use of tools and technology has lagged far behind invention and availability. Because teaching and learning are correctly perceived as being highly personal activities, educators have been reluctant to use tools and technologies that would seem to depersonalize student-teacher relationships.

What educators have not perceived about the activities of teaching and learning is that these two functions can be separated from each other and still remain personal. Furthermore, teachers and students have been to some extent infatuated with and dependent upon what might be called the cult of personality in teaching. And here arises a curious paradox: The teacher often assumes that only he can properly teach the student, yet if the student fails to learn, the teacher dismisses him as lazy or unqualified, his lack of achievement his own fault.

The student is perhaps more consistent but even less understanding of the subtleties of teaching and learning. The student shows his concern with teacher personality by seeking out teachers of reputation (called taking the teacher and not the course), and then, when achievement is unsatisfactory, he often blames his teacher for his failures.

To a considerable extent, the misunderstandings of teachers and students regarding teaching and learning represent an inability—or unwillingness—to differentiate between the separate responsibilities and activities of the teacher and the student. Because our ideal has been teacher and learner at opposite ends of a log, we have assumed that what passes between the two must be immediate and continuous; that teacher and learner are in some sense chained together before each may carry on his related but separate activity. It is therefore not surprising that education almost alone in organized human activity has been somewhat unresponsive to tools and technology. Happily, education has not generally been either poorer or more costly as a result (at least to the present). But opportunity for learning has as a result been largely restricted to those learners who are able to submit themselves to this space-time chained relationship with a teacher.

Extension, on the other hand, has been obligated to bring opportunities for learning to persons remote from centers of learning (and incapable of this chained relationship), and thus has been forced to experiment much more extensively with tools and technology. And one of the results of this willingness to use tools has been a continuing tendency on the part of nonextension faculty to look down upon extension methods of teaching which enable the teacher and the student to carry on their related activities even though separated in space and time.

The human element in teaching and learning is thus basic to any consideration of extension's use of tools in the future. To speculate on how the tools of education will be used in the coming years, we should therefore look first at the teacher, the student, and the courses that will be taught.

1. *The Teacher*

The extension teacher in the decades ahead is likely to be better trained and more versatile than was his counterpart in the first half of the twentieth century. He will probably be a professional, educated specifically for teaching in extension, or at least retrained (from teaching elsewhere) for extension work.

Versatility will be most evident in the variety of ways in which the extension teacher will carry on his work. He will teach using many media and methods.

The extension teacher will be supported by a number of specialists in media and methodology. The specialists will work in the background to make the teacher comfortable and effective, regardless of the medium or method of teaching used. In addition to specialists in particular media (such as TV, radio, etc.) there will be a faculty specialist in learning systems design and coordination. This specialist will apply abilities derived from broad training in the audio-visual field, engineering, communications, and psychology.

The teacher and the media and systems specialists will work with one other specialist in the design, development, and production of the courses to be taught—a curriculum specialist. The courses taught by the teacher will be part of a pattern, a sequence, a curriculum. The life-long learning or continuing education imperative will be directed toward substantial goals, the achievement of which will require following a curriculum. Extension curricula will not be institution bound but will have regional or even national acceptability and validity.

Hence the teacher will reach students not only in his own state or region but nationally as well, since the media and methods employed by him in teaching will remove barriers of space and time in learning.

The teacher will teach at a place and at hours convenient to him; the students will learn at a place and at hours convenient to them. Face-to-face confrontation of teachers and students will be less common; yet the teacher's relationship to his students will be no less personal, probably more tutorial than now obtains.

The teacher will prepare materials (with the help of media specialists) which will be used to a large extent on an individual basis by students, who not only will learn at times and places convenient to them (the system will work day and night) but will also progress at different rates. The teacher (especially in large enrollment courses) will have a staff of assistants to help him in the performance of tasks which can be supervised. The teacher will spend less of his time in teaching in the conventional sense (i.e. lecturing to classes) and more of his time in preparing materials which bear his stamp, his "presence," and which will be continually available by a variety of media to students wherever they are.

The teacher described here will be first of all (as now) a content specialist. But content specialties in extension are also likely to undergo

change in the years ahead. There will be clusters of related specialties in interdisciplinary departments, departments organized around the needs of adults in our society, departments organized to integrate related areas instead of fragmenting instruction. (For example, there is a need for adults to understand the impact of science and technology on modern life. Biologists, physicists, chemists, other scientists, and the historians of science and technology cannot be expected to interrupt their primary work to delineate this content area. Nor would they perhaps be individually competent to do so. However, scientists, historians, philosophers, political scientists, communications specialists, and others could come together to form a "Science in Society" department. Such an interdisciplinary unit, meeting occasionally, might seek as permanent members persons whose formal training has been in appropriate interdisciplinary studies. The point here is that setting up conventional and separate extension departments of physics, chemistry, etc. will not suffice. The intelligent adult cannot be trained as a specialist in each science, in government, sociology, history, and so on. The knowledges needed by adults in the new society will have to be organized differently from that intended for specialists in specific areas. The structure of extension instruction and of the courses taught will therefore have to follow the needs of adults to be successful.)

The teacher, in addition to his content specialty, will be generally knowledgeable and comfortable in the regular and effective use of many media of instruction—correspondence-tutorial, radio, TV, programmed, tele-lecture, and computer. What will differentiate him from his counterpart in the first half of the twentieth century is his acceptance of, and unconcern over, the use of technological means of bringing instruction to students at all hours, in homes as well as schools.

The teacher will be the head of a team—some highly trained specialists, some technicians, some subprofessional, some internes training to become specialists or teachers.

The extension teacher will teach primarily noncredit courses—that part of curricula which fulfills functional, social, cultural, and recreational needs of adults. Instruction will be at a significantly higher level than now because all persons in our society will find it necessary (if not required) to continue learning for a longer period of time. The adult or extension courses taught by the teacher will have a recognized life value for people in occupying time and in reeducating them to meet changing conditions and requirements. This value will be apart from

the value given to credit/degree programs for youth and professional candidates.

The extension teacher will hence have less to do with the teaching of credit/degree-oriented courses. Degree courses will also be broadly available to students (youth and adults) anywhere, anytime through the same system of team design, development, and production of courses; but the credit/degree courses (nonextension) will be taught directly by the "degree" teachers to students both on and off the campus, using the same processes, media, and methods.

The extension teacher, therefore, will find himself gradually freed from the necessity of "extending" the residence courses designed for degree-bound students. He will instead, as a member of the kind of department mentioned earlier, and through a variety of media and course formats, teach a new adult extension curriculum which will range from somewhere near the beginning college level (which will be beyond the present beginning college level) to well beyond the baccalaureate level, to take adults on long, continuing excursions into learning both for its own sake and for practical and cultural benefits.

2. *The Student*

The extension student in the decades ahead will be part of a larger group than he is today. This increase in number will not be simply the result of increased population, but will mainly reflect social, economic, and technological changes which (a) will continue to reduce unskilled job opportunities, (b) will continue to shorten the workweek of almost all who are employed, (c) will shorten the person's work-life by postponing time of entry into employment and requiring earlier retirement, (d) will require continuing training in many occupations to keep up with change, (e) will admit women into occupations on the same basis as men, and (f) will keep more people learning throughout their lives than ever before.

Not all students will, of course, be taught through extension. Other schools (high schools, community colleges, technical schools, vocational schools, junior colleges, university centers, continuation centers) will carry increased burdens as a larger and larger proportion of the population continues in school throughout life. "Continues in school" suggests that the student will attend school as he does today, and some may do this. However, the extension student of the future will probably not "attend" classes; rather, the opportunities and processes of learning will come to him. He will learn at home, at the office, on the job, in the

factory, store, or salesroom, or on the farm. Continued learning will indeed become, for many, part of the job which they are employed to perform. Since most workers will eventually be employed for only a few hours per day, there will be short shifts both day and night, which will be suitable to the employment of women, who will be able to combine home, family, and work careers without slighting home and family responsibilities. By today's standards, most people will work part time, and learning will occupy a part of the time released from work as we know it today.

The extension student will be more advanced than today's. He will not usually pursue "one shot" courses, but rather will follow a curriculum which leads to some larger goal—a degree or certification or accreditation. As our society becomes less work-oriented, and as extension develops programs for needs not so much related to economic advantage, the certification-accreditation achieved will perhaps entitle holders to membership in societies composed of nonprofessional specialists in various content areas.

The average age of the extension student may not undergo change, but the lower and upper extremes will be extended, particularly the upper. With earlier retirement and a shorter amount of time during one's life given over to work, motivations toward learning will change, and the value given to education will be different. With the gradual easing of work requirements, there will be a search for activity to replace work. Learning will be one such activity with high social and cultural value. The student will prepare intensively for his work career, and while working, keep up with the changes that affect his performance. But increasingly as he approaches early retirement, and while he is still learning on the job, he will follow subjects more related to life than work, subjects of social, cultural, political, and recreational significance.

Residential centers, operated by extension, will attract adults whose work period is ending or has ended and who will be involved in truly liberal learning—learning for its own sake, learning for the occupation of time, learning for self-perfection and self-satisfaction. Such extension students will not be old; indeed, if the workweek shortens as much as now appears possible through automation and the increase of the available work force, by A.D. 2015, the adults free to attend residential centers might well be in their thirties. For this to happen, of course, there will have to be a basic change in the attitude of our society toward work. Extension will help accomplish this change by creating moral equivalents to work through continuing adult education.

The extension student will be accustomed to learning more independently than today's student. He will have learned to accommodate periods of guided self-study, tutorial learning, group learning, residential study, library work. He will be at ease in using a number of media and methodologies for learning. He will take a more active role in learning, under the guidance of trained adult counselors available in every city or county, working as part of extension's staff.

The extension student will draw on the resources of institutions on a regional basis. Not only will the student be mobile in terms of ability to move about, but he will have more time to give to learning. Extension "evening" courses will be offered over a much greater range of time; indeed, some will be available twenty-four hours a day through the use of telephone lines and computers.

The extension student in one region or occupation, in rural or urban areas, will be more like his counterparts in other regions, occupations, or areas. Differences resulting from rural or urban background, differences from occupation or geographic habitation will be less noticeable. However, greater individual differences on the basis of interest pursued will be common. In a society gradually drawing away from a work-oriented ethic, the adult will be encouraged to "let himself go" in the development of interests far beyond the range of subjects now offered to adults. Since few if any of these subjects or curricula will be studied for strictly economic reasons, freedom of individual choice will be greater, and prestige will attach not alone to curricula which lead to the most remunerative occupations or professions, but also to the areas which offer the greatest challenge and freedom for self-development and expression. Since men will gradually be freed from the necessity of working continuously throughout their lives, they will turn in greater numbers to the subjects which presently can attract their major adherents only among women—art, literature, music, social issues, philosophy, etc.

The extension student, in short, will be on the one hand more homogeneous in terms of basic preparation, motivations, and ability to learn, and on the other hand more heterogeneous in terms of interests, and freer to follow opportunities for learning in greater depth.

3. *The Courses and Curricula*

The courses and curricula of extension will present a contrast to present-day extension. Courses and curricula will be varied because of the diversity of interest of extension students and the diversity of purposes of adult education. While these diversities now exist, the future will see them greatly intensified.

Courses and curricula will be offered by extension to three major client groupings:

Level	*Curricula*	*Leading to*
1. Post-high school	technical cultural recreational	proficiency tests diplomas certificates
2. Collegiate-academic	academic	proficiency tests degrees
3. Postgraduate, adult	technical cultural recreational	proficiency tests certificates

The courses and curricula will be most varied in the post-high school and postgraduate areas, where the needs and interests of adults for job related and nonjob related learning will cause the greatest creativity in program development.

The collegiate-academic degree oriented programs will be more restricted, reflecting the academic programs of the universities themselves. However, the academic courses offered will include undergraduate, graduate, and advanced levels. Extension will administer the counseling, selection, and registration of students, but the instruction will be carried on primarily by the residence faculties. Residence requirements will be greatly modified to permit adult students to obtain degrees—even advanced degrees—without long periods of residence on campuses. In fact, the off-campus, part-time student will be taught much the same as the on-campus, full-time student. Laboratory and library assignments will be carried out either off or on campus by students working individually at their own pace, and presenting themselves for examination. Laboratory and library resources will be available to students off campus in regional or area facilities, as well as on the main campus for full- and part-time students.

The nondegree oriented courses and curricula will be constructed around adult functional and life-oriented interests and needs. Since adults will have more time (and prime time, i.e. not only evenings or weekends when the adult is tired from the hours spent in work) for learning, courses and curricula will be greater in scope and depth. Content will represent many areas, including some regarded today as frills because they are not work oriented. In fact, the courses that are unrelated to

economic advantage or competition will in time take on greater significance as their necessity for occupying time, developing rich interests, and liberating the adult from a work-oriented existence is realized. It is conceivable that courses in politics, international affairs, diplomacy, communications, theory of management, the advancement of science, health and happiness, human development, comparative cultures, systems of ethics and morality, literature, art, and music will all be available in considerable depth to nondegree as well as to degree students. Pursued leisurely (since the economic pressures will be lessened) these and other curricula will occupy adults for long periods of time and enable society to benefit from a citizenry that includes large numbers of rather highly educated though nonprofessional specialists in many areas.

Other curriculum areas might well include travel and comparative geography, culture and architecture, space exploration and interplanetary logistics, the cultivation of the seas, theories of work and nonwork, self-realization through self-expression, the economics of a society of abundance, and many others. The limitations of the content offered by extension will only be those imposed by lack of interest, creativity, and imagination. There will be courses and curricula at less abstract levels, too, closely geared to hobby and recreational interests—and others directly related to the economic, social, vocational, and professional needs of adults.

4. *The Tools of Extension*

If the informal speculations above on the teachers, students, and curricula of extension in the next half century have any validity (and who of us will be here to test them in 2015?), that validity will in part rest on the enormous freedom that extension programming will realize as a result of the application of technology to extension instruction. The human factors mentioned in the introduction to this paper, the attitudes and mind sets of the human beings who create, teach, and learn from extension education are in many ways more important to the future of extension than the tools and the technology. Without favorable changes in the human factors toward acceptance of tools and technology, the next fifty years could be drab and disappointing. Equally, without a growing and diversified technology of instruction, the imaginative creations of extension educators could fail to become reality. If there will be equal growth in human attitudes and in technology, each contributing to the other, then the use of tools for teaching-learning in the decades ahead will become a major characteristic of extension.

The tools of extension are many; and just as extension has produced innovations in the use of tools in the past, its role in the future will include a commitment to developing and adapting the technology of the times to educational use.

Correspondence instruction will no doubt continue to be one of the principal formats used in extension. There will still be need for exchange of lessons and guidance by mail in the years ahead. There will be many students, particularly in countries now described as *developing,* who will have to depend on correspondence instruction for opportunities to learn because they are some distance from centers of learning. The advantages of correspondence instruction (a one-to-one relationship with the student, low cost, a student-determined rate of progress, adaptation to individual differences, and continuity of availability through self-contained learning packages always present and ready for use) will cause increased use of this format in extension teaching.

The disadvantages of correspondence instruction (difficulty of motivating students, dependence on printed and written materials, lack of pacing stimuli, difficulty of including the topical, difficulty of maintenance, slowness of response) will increasingly suggest the wisdom of combining correspondence instruction with other media and other formats for the strengthening of both correspondence instruction and other forms of instruction.

For example, radio, television, and class teaching have advantages of immediacy, pacing, and motivation. Television has the additional advantage of being a superb visual as well as an auditory medium—surpassing in this respect the class or laboratory where "front seat" visibility is not possible except to a very few. Programmed instruction and class instruction (at least potentially) have the advantage of providing immediate knowledge of results for instant reinforcement. Like correspondence instruction, programmed instruction has possibilities of adaptation to individual differences, permits a student-determined rate of progress, has continuity of availability, and enables students to start and finish at any time.

The disadvantages of instruction by radio, telephone, and television are high initial costs, unequal accessibility to all students, cost and difficulty of maintenance, and discontinuity of availability.

For example, radio, television, or telephone teaching is discontinuous because it must be scheduled. The student who cannot conform his personal activities to the schedule is unable to take advantage of the offering. (The same disadvantage is characteristic of classes which also must be

scheduled.) But there is more than occasional unavailability involved in media discontinuity. The student whose learning is tied to the mass media is not free to move at his own pace; he must conform to the pace set by the medium. It is possible, however, that in a society moving toward greater freedom of time for most persons, these disadvantages will be minimized or removed. It is also possible that technological improvements (some will be mentioned later) will enable the student to move more at his own pace.

The disadvantages of programmed instruction are high initial cost, cost and difficulty of maintenance, difficulty of including the topical, and lack of relationship with a live teacher.

The advantages of joining or articulating these various formats and media are obvious; and these advantages will be sought more widely in the years ahead.

Teaching methods will be created to take advantage of the strengths, and avoid weaknesses, of all the media and formats used, of all the tools of education. Thus the devices, media, and tools which are best used in motivating students will be used for that purpose. The devices or tools best used for transmitting information will be employed in that role; the devices and tools which may best be used for assuring rapid feedback to and from the student, and providing reinforcement through immediate knowledge of results, will be used for these functions.

Television, radio, and the telephone will, of course, be augmented by other audio-visual devices of great ingenuity and usefulness to education. Devices which transmit visuals as well as sound by telephone lines are already in use on an experimental basis; devices which program visuals with sound are already in existence and widely used in industry and the military; technical improvements in video-tape techniques are bringing down costs and providing greater flexibility and portability of equipment; devices which link slow scan video with radio transmission are already a reality. The rapid advance of technology promises tools for extension which will bring ideal conditions of learning into being for the most distant student.

For example, soon to come into use are devices which will make the home that is equipped with telephone, television, radio and turntable a veritable private learning laboratory. One system, using a 33⅓ rpm disc played on a regular turntable and connected with a television set, will "play" a lesson combining sound and visuals in the home at the time when the student wants to learn. Freed from mass media schedules, the student can work at his own pace, at his own convenience. The cost of

such systems might be less than the cost of teaching by radio and TV networks or telephone lines.

On the other hand, the self-contained, prepackaged course—even when buttressed with sight and sound—has one important disadvantage: It is not capable of instant modification to include the topical, the latest information needed to maintain up-to-dateness. Furthermore, it becomes remote, even on a one-to-one basis as in correspondence instruction, from the teaching authority. Hence there will be increasing use of radio, TV, and the telephone to provide the topical and the motivational elements lacking in prepackaged courses and to provide exposure to greatness (or at least authority) in the person of the teacher.

In the years ahead, the separate tools of extension education—correspondence instruction, radio, TV, programmed courses combining audio and visual signals, the formats or processes built around the teacher working with large and small groups—will all find continuity separately but increasingly will be articulated in courses which will be more effective than courses which use only one medium or one approach.

State, regional, and national networks for educational television and radio will become realities, but their use will be modified to fit new requirements. These media will be the carriers of extension as well as other educational and instructional programs. Multiplex-type connections between stations, and selective receivers will enable broadcasters to beam several courses on each frequency. Educational broadcasting will occupy most of the twenty-four hours of the day, not only to permit students to study at times convenient to them (programs will be repeated at different times daily) but also to permit satellite stations to record programs for future playback. But the greatest tool for helping educators achieve the potential of other tools of education is the computer.

The computer will become an important educational tool. A student on or off campus, full or part time, will dial on the telephone the computer number from a list which has been given to him. He will punch in his name and the course he is starting, ending, or continuing. The computer will place on the telephone line the lesson and instructions necessary, pausing for the student's response, and then evaluating it. The computer will transmit to the student the audio portions of the course and the needed visuals, which will be seen on a device which reproduces still pictures or will be fed into a television set for moving pictures. Other devices will reproduce via telephone signals the movements of the teacher's pencil as he writes on the board or draws a diagram.

The computer will permit the student to answer back, ask a question, make a recitation, and practice and compare his pronunciation with that of a model (as in a language lab). The computer will assign reading and study activities, will trigger off mailings of books and study materials to the student at the correct points, will send the student to libraries, summon him to laboratory sessions at regional or campus centers, and arrange for examinations under supervision as well as personal conferences with the teacher. The computer, in short, will "program" articulated media courses, enabling students to work at their own pace, at their own convenience.

An age-old goal of education (to produce students capable of lifelong independent learning) will become realizable by the use of instructional tools and techniques which will give the learner broad experience in guided but independent learning.

In the coming years, the lag between technology and educational practice will be lessened, and more rather than fewer tools will be employed in extension teaching. The present configurations of correspondence, radio, TV, and programmed courses, and the use of audio and visual enrichment will continue, but the discreteness or separateness which has characterized each format or medium will yield to the advantages of a systems-designed articulated approach to instruction programmed by computers and monitored by teachers.

But the tools will not be the whole story. The tools will be used within instructional systems invented by teachers working with media and curriculum specialists. Extension programs will be regional and national in scope, with a degree of collaboration between extensions that will be comparable to that now characteristic of related interdisciplinary departments. No person in the country (and perhaps someday no person in the world) will any longer be remote from opportunity for learning, whether his motives for study be economic, recreational, or cultural. Such a learning system will be the first requisite of the nonwork-oriented society which is to come. Such a system will be necessary if we are to evolve a moral equivalent to work or to war. Such a system will enable extension to fulfill its role and responsibility for all adults and will enable adults to know the delights of learning pursued individually for purposes related to the changing requirements of life itself.

The speculations in this paper raise more questions than were originally proposed. To look ahead fifty years on the basis of clues and trends now faintly discernible is hardly a reliable way to gauge the future, yet it is the only way we have. It is fitting, therefore, to slip back into the

present by recalling the pungent old proverb which says, "He who would forecast the future is a fool," even though, as William Cowper pointed out, "A fool must now and then be right by chance." But it is Shakespeare (as usual) who has the best last words: "Thus we play the fools with time, and the spirits of the wise sit in the clouds and mock us."

Oh, you wise ones, what mockery do we now deserve?

Charles Andemeyer

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